

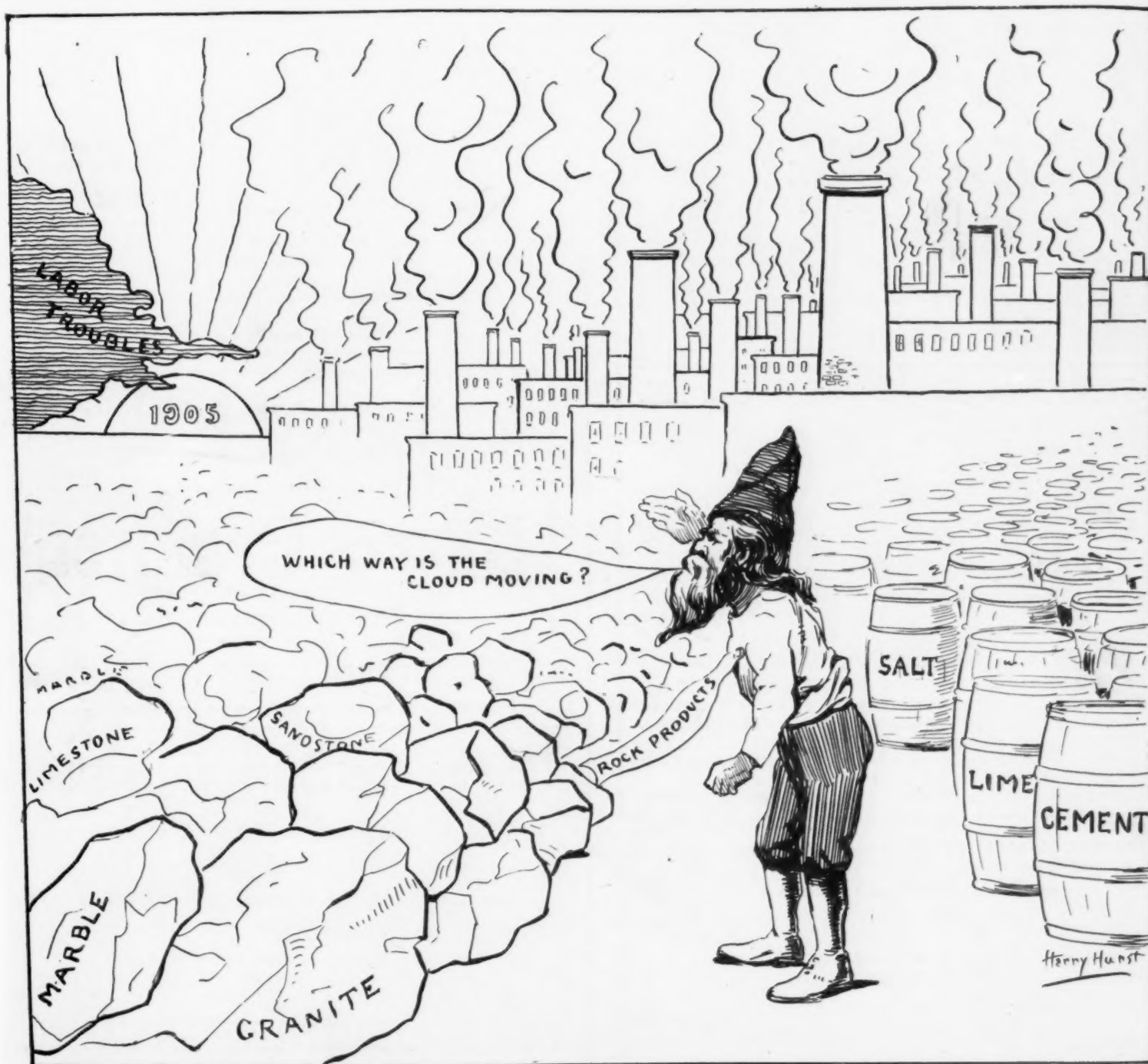
Rock Products

DEVOTED TO THE PRODUCTION
AND SALE OF ROCK AND CLAY PRODUCTS.

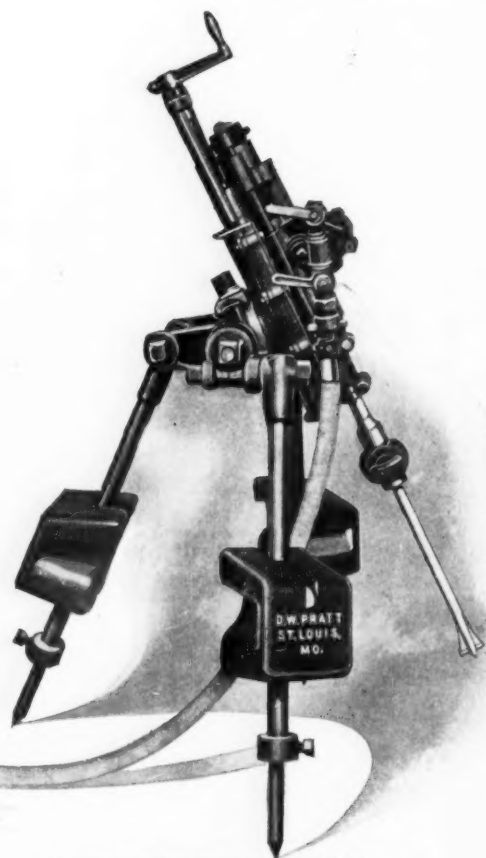
Vol. III.

LOUISVILLE, KY., JANUARY, 1905.

No. 10.



ONE PERTINENT QUESTION DEMANDING SOLUTION IN 1905.



PRATT'S IMPROVED ROCK DRILL.

D. W. Pratt

Machinery Company.

No. 614 North Third Street,

ST. LOUIS, MO.

DESCRIPTION OF ROCK DRILL.

THE VALVE, which is the most important part of a rock drill, is of the Corliss or Rotary design and retains a perfectly steam or air-tight seat under all conditions.

Its movement is ABSOLUTELY and PERMANENTLY POSITIVE under any pressure. IT WILL START AUTOMATICALLY AT ANY PART OF THE STROKE. It will run at any speed desired, whether the VERY FASTEST or the VERY SLOWEST without danger of stopping. It will require LESS STEAM or AIR to do a given amount of work than any other drill, the valve being so constructed that the piston is POSITIVELY REVERSED.

It has a variable stroke and can be used at a stroke where others fail; this being one of the essential qualifications of a good drill, especially in starting a hole or working through seams. It strikes a very hard blow and its recovery is instantaneous. It has no peer as a mudder.

Our drills are made of the very best material the market affords, by skilled workmen, and with new and improved machinery, and particular care has been taken to make them the best on the market. All parts are interchangeable.

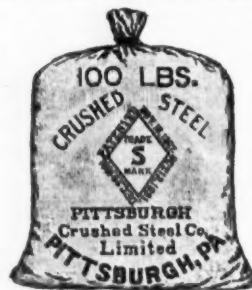
Complete plants of Machinery for Mines, Quarries and Contractors.

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PITTSBURGH, PA., U. S. A.

Patentees and Sole Manufacturers of

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Crushed
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Angular in shape, made from high-grade Crucible Steel. Tough and lasting. Saws, Rubs, Grinds, Polishes Granite, Stone, Marble, Brick, etc. Does it cheaper and faster than any other Abrasive. Write for prices and samples.

Sole Agents for Celebrated "Samson" German Chilled Shot. Samples and prices furnished on application. New England trade supplied by Harrison Supply Co., Boston, Mass.

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For a Small Investment.
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Quarriers and Manufacturers of

Barre Granite.

ALL WORK GUARANTEED FIRST-CLASS.

BARRE, VERMONT.

The Pirie Tool Sharpening Machine

is now on the Market.

Its capacity is 75 men, but it can be profitably used where 50 cutters are employed within a radius of one mile. For full particulars, write or inquire

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We are producers of Buff and Blue

AUDITORIUM HOTEL AND ANNEX, CHICAGO.

Bedford Oolitic Limestone,

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CEMENT AND LIME STOCK

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MILLS: New York, Ohio, Kentucky, Virginia, Pennsylvania, Michigan, Tennessee and North Carolina.

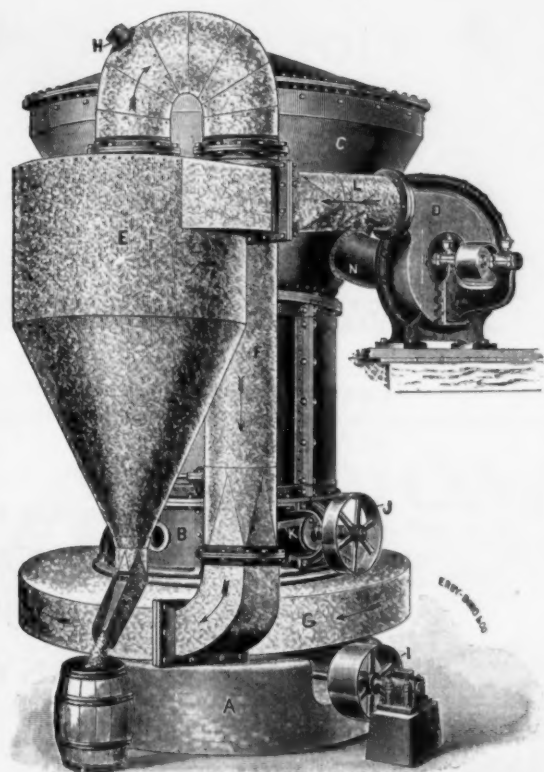
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WITH
Air Separator
GRINDS EXCEEDINGLY FINE AND IS
Absolutely Dustless
IN OPERATION

One mill like cut grinds five tons per hour, to one hundred mesh fineness, of coal, lime, limestone, etc. We can refer you to the largest concerns in the world for references.

Special Separators for hydrated lime, cement or any material.

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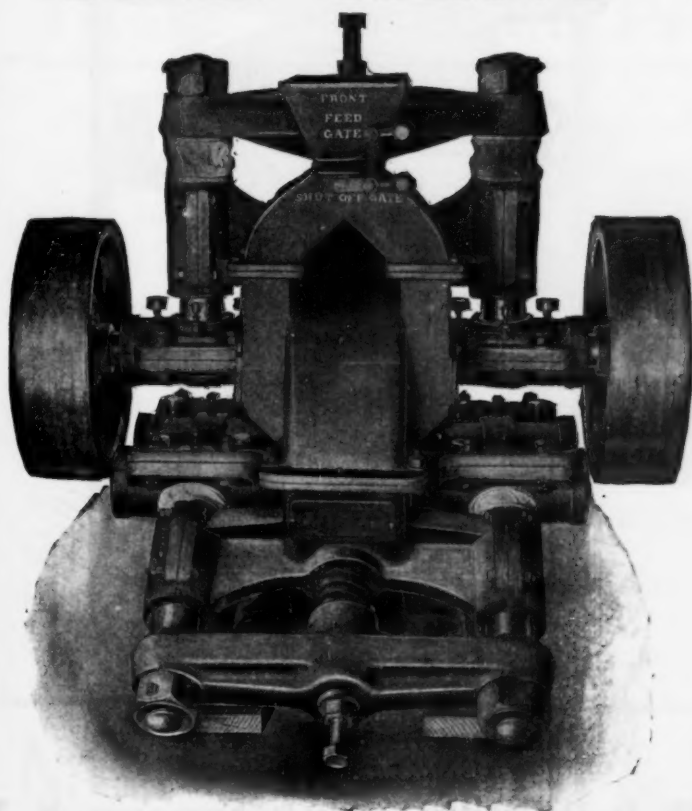
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IMPACT PULVERIZER CO.

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THE KENT PULVERIZER



Takes one inch feed. Grinds to any fineness
from 10 to 200 mesh.

GRINDS PER HOUR WITH LESS THAN 25 H. P.

CEMENT CLINKER,	40 bbls.	to 98%	20 Mesh.
CEMENT CLINKER,	12 "	" "	100 "
LIMESTONE,	2½ tons	" "	200 "
LIME,	4 "	" "	100 "
ROSENDALE CEMENT,	43 bbls.	" 90%	50 "
QUARTZ TRAP-ROCK,	4 tons	" "	40 "

You can easily figure from this what a
Kent Mill would save for you.

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NEWAYGO PORTLAND CEMENT CO.,
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Says:—Four KENT MILLS are driven by one 75 H. P. motor.

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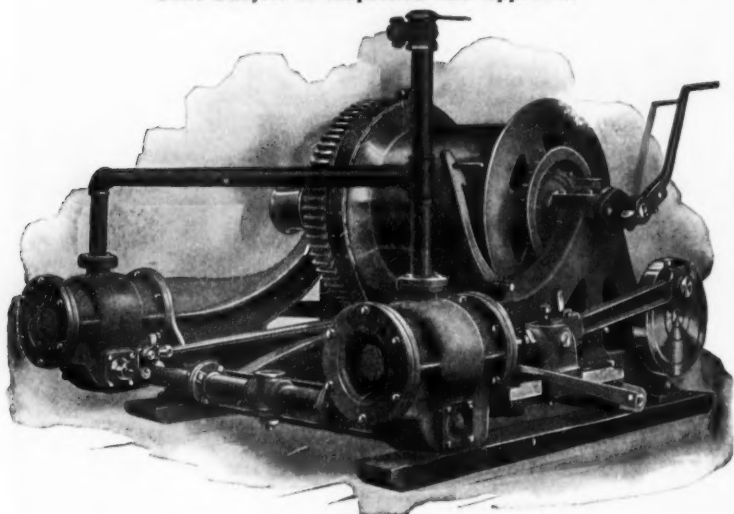
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NEW YORK.

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The Quincy Mine and Quarry Hoist.

No Question About Its Merit or Efficiency.
You Decide Those Points Yourself.
Sent Subject to Inspection and Approval.



BUILT BY QUINCY ENGINE WORKS, QUINCY, ILL.

Cylinders 8x10, Drum 14x20.....	\$496.00
Cylinders 8x10, Drum 24x24.....	505.00
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These prices are cash without discount, but cover the complete machine f. o. b. Quincy, Ill., or Chicago. You have your choice of the Reversible Hoist or Friction Drum Hoist. We have both for prompt shipment. For Quarry work or for Mine duty you can't beat 'em. Strong, quick, simple, modern. Shall I ship you one?

WILLIS SHAW,

MACHINERY.

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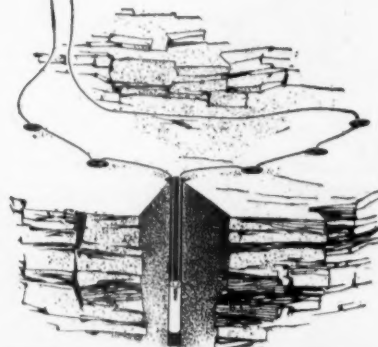


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Electrical Fuzes and Aetna Dynamite

INSURE SUCCESS IN
BLASTING



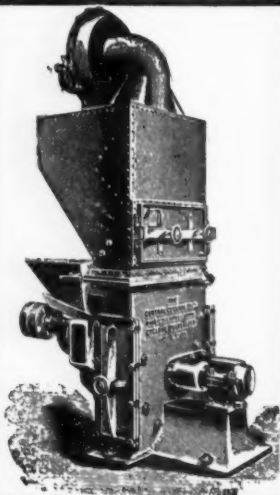
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OUTPUT per H. P. per hour of the Cyclone Mills is much larger than that of any other mills.

We build SCREEN SEPARATION MILLS too.

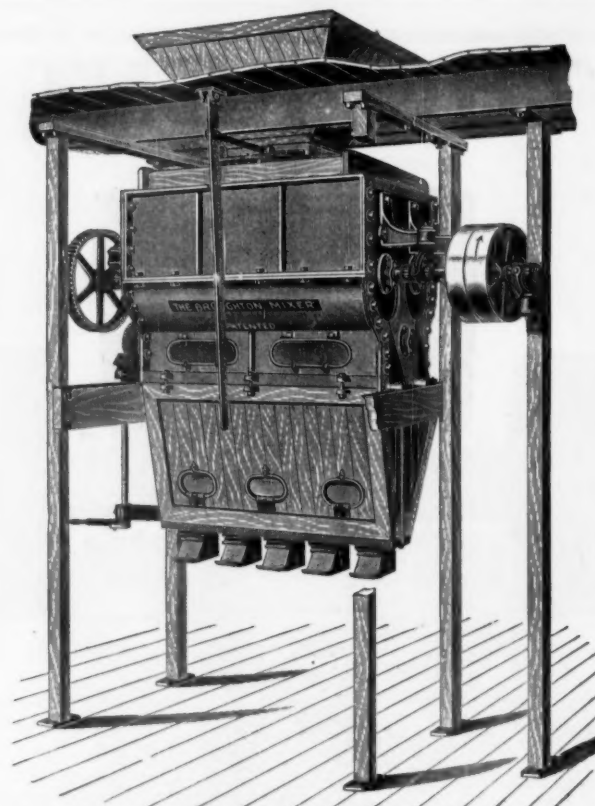
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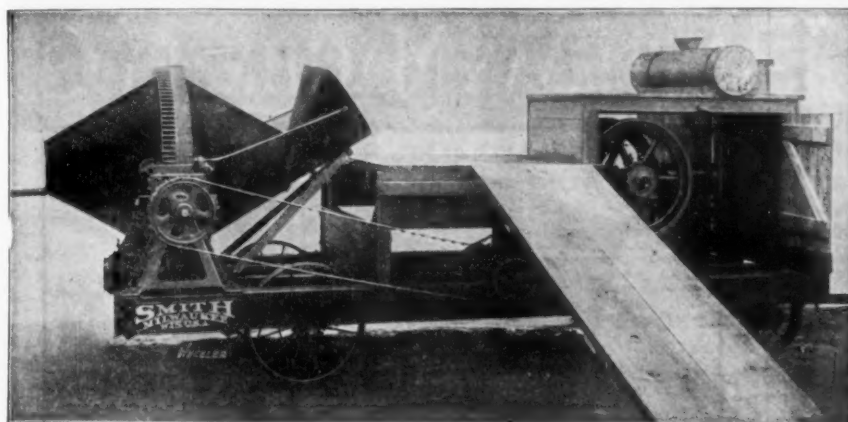
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Mixers of Plaster, Cement and
Dry Materials. Send for Circular.

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900 in use; 6 sizes; any combination of power and mounting. Just the thing for

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"MONARCH WIRE ROPE"

The Most Desirable Rope made for
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It is not the color of the Strand that makes Monarch Rope so superior, but the material it is made out of. The Whyte strand merely ensures you getting the right rope.

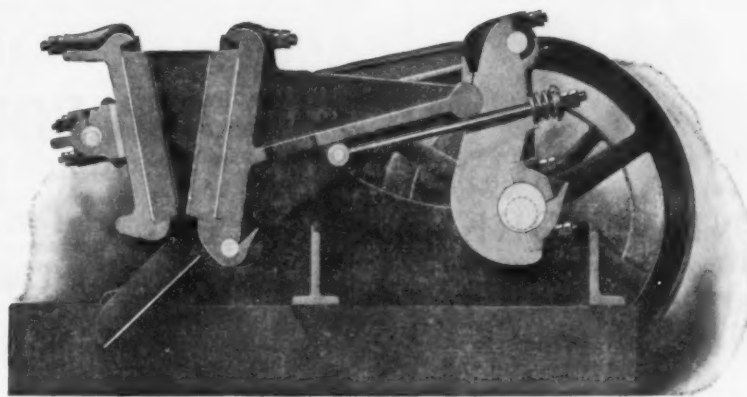
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The National Solid Frame Rock Crusher, built in four sizes, 8 x 15 to 11 x 22 Jaw openings. 10 Tons to 30 Tons hourly capacities.

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Latest Improved **KOTTEN** Pneumatic Tool.

This tool has absolutely but three parts,
Cylinder, Piston and Head.
No Latch Pins, Springs or Locks. All
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No chance for wear or clogging and de-
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VALVE AND VALVELESS CARVING TOOLS.

COMPLETE PNEUMATIC PLANTS.

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Other New Editions in Preparation.

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Alstons Parallel Stone
Cutting Attachments
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IS DIFFERENT.



It is Moisture-proof.
It Makes Dry Walls.
No Furring and Lath Needed.
Plaster Applied Directly to
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Suitable for use in Party Walls.

It is not a hollow block.

The Blakeslee Patent covers funda-
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there are no continuously solid portions
from front to rear for the moisture to
traverse.

Write for catalogue of Machine.

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Carefully Straightened and Cut Square and True. Ordinary Sizes Constantly on Hand.

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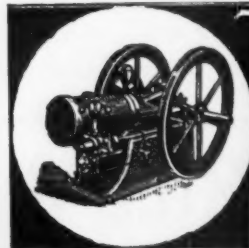
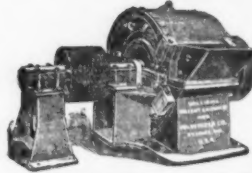
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AND
GASOLINE ENGINE**
STANDS SUPREME
LET US TELL YOU WHY

WHITE-BLAKESLEE MFG. CO., Birmingham, Alabama.
SUCCESSORS TO THE BLAKESLEE MFG. CO.

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Tell 'em you saw it in ROCK PRODUCTS.

CHILLED STEEL SHOT.

Granite Stain Eradicator.

Which we guarantee will permanently remove all Iron, Sap and Oil Stains from granite without injury to the stone.

Warranted Superior to All Other Abrasives for Sawing, Rubbing and Grinding Granite, Marble, Sandstone, or Any Other Hard Substances

Write for Price List

We are positively the largest concern in this country handling Granite and Marble Polishers' Supplies exclusively. We sell Carborundum Grains and Bricks, Emery Grains and Bricks, Waddells and "Ox" Putty Powder, Pure Mexican Felt, Red Beach Plaster, Tampico Scrub and Steel Wire Brushes, Red, Blue and Brown Grits, Scotch Hone, Oxalic Acid, Selected Lump Pumice Stone, Combination Boxes for hand polishers of both marble and granite, etc., etc.

Send for Samples

Correspondence Solicited.

Remember we positively guarantee the Quality of everything we sell. This always insures your getting the Very Best Goods that are manufactured.

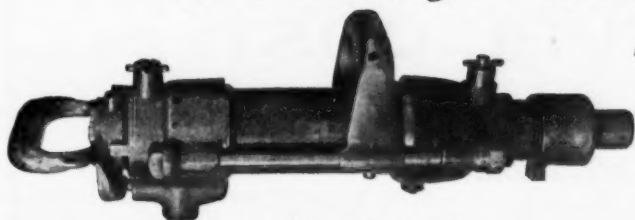
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HARRISON SUPPLY COMPANY, 32-34 INDIA WHARF, BOSTON, MASS.

CHICAGO PNEUMATIC TOOL CO.

Fisher Building, CHICAGO.

95 Liberty St., NEW YORK.



IMPROVED CHICAGO ROCK DRILL.

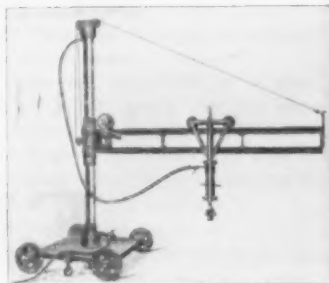
Weight of Drill.....	25 lbs.
Diameter of Piston.....	1 1/2 in.
Length of Stroke.....	2 1/2 in.
Free Air Consumption.....	30 cu. ft. per min.
Diameter Hole will Drill.....	1 in.
Depth.....	24 in.

We illustrate herewith one of our most popular Plug and Feather rock drills; also the Chicago Stone Dresser. We are prepared to quote special prices on quarry equipment.

We manufacture a great variety of stone tools, to meet all requirements.

Complete Plants Installed Under Liberal Guarantee.

INQUIRIES SOLICITED.



Dallett Plug Drills Carving Tools and Surfacing Machines

Represent the latest advances in the construction of pneumatic tools for stone working. It will be to your advantage to investigate the improvements which are being made in this class of apparatus by us before purchasing. SEND FOR OUR LATEST CATALOGUE.

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WITH OUR

DRYING MACHINERY AND PRESSES

Which will dry more Clay, Coal, Gravel, Sand, Shale,
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 any similar machinery on the market.
 Ask for catalogue, testimonials, etc.

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REDUCE YOUR FUEL COST!

Save 25 to 60 per cent in fuel by
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for the regulation of combustion and the control of temperature and volume of flame.

In constant use in many plants throughout the country, making a
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BRICK MACHINERY.



The Best Machinery for
 the manufacture of the
 best product. The quality
 of our machinery insures
 the quality of your brick
 and freedom from repairs.
 Machinery for the manu-
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 by all processes.

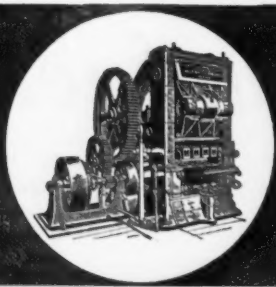
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BURIAL VAULTS

No Artificial Stone Plant is complete unless
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 Perfectly air-tight and water proof. Secure your
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 CEMENT BAGS.

DEALERS IN
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 WRITE FOR PRICES & SAMPLES.

Tell 'em you saw it in ROCK PRODUCTS.



Entered as second-class matter March 4, 1904, at the Post Office at Louisville, Ky., under the Act of Congress of March, 1879.

THE FRANCIS PUBLISHING CO.,
Publishers.

E. H. DEFEBAUGH.....President and Manager.
FRED W. RUGG.....Secretary.

A monthly trade journal devoted to the interests of the manufacturers and dealers in rock products and kindred lines, including Lime, Cement, Salt, Sand, Slate, Granite, Marble, Sandstone, Grindstones, Artificial Stone, Emery Stone, Quarries, Monuments, Manganeses, Asphalt, Phosphates, Plaster, Terra Cotta, Roofing and Roofing Tile, Coal, Oil, Mineral Wool, Brick, etc.

The mission of ROCK PRODUCTS is to serve the trade in any and every honorable way possible, to promote better profits and make life more pleasant for those engaged in the business to which it caters. With this end in view, criticism is courted, and all are invited to use its columns to further ideas and suggestions for the good of the trade. The office, too, is at the service of the constituents of this paper; so when you want to buy or sell, or merely ask a question, write, and when you are in town, call and make it your headquarters.

"TELL 'EM YOU SAW IT IN ROCK PRODUCTS."

SUBSCRIPTION RATES, \$1.00 per annum, postpaid anywhere in the United States, Canada or Mexico; \$1.50 elsewhere in the Postal Union. Single copies, 10 cents.

ADVERTISING RATES will be furnished on application.

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THE FRANCIS PUBLISHING COMPANY,

431 W. Main Street, Louisville, Kentucky

BRANCH OFFICE, NEW YORK CITY:

Room 502, 136 Liberty Street,
ALEXANDER CRISTADORO, Manager.

LOUISVILLE, KY., JANUARY, 1905.

A Happy and Prosperous New Year to You.

It was with mingled sadness and joy we tore off the last leaf of the year 1904. It was a good year for most craftsmen; true, some of us learned that you can't go on and on and on increasing your capacity to do things without being awakened to the fact that there is more production than demand, but it must have taught many of us the lesson that too much gain sometimes is worse than not enough, but capacity is the watchword of the American business man, and it was ever thus, and will be so after we have had our books balanced for the final settlement.

With this conclusion reached, should we not remember these lessons when we do our planning for the New Year?

We can see on the horizon a beautiful, bright future looming up before us, both as a craft and a country. No baby has been more cautious in walking for the first time than has the infant Rock Products' industries, but every branch of these trades has long pants on now, and with good organizations. Most of our co-workers are sturdy chieftains and the only cloud that has retarded progress of the industry has been the arbitrary methods of the unions, but it is all off now; the men who have had to pay the bills will not submit longer to being bulldozed. They will take a hand for the shackles have been loosened, and in most trades thrown aside, the demand of the walking delegate will be spurned, and both employer and employee, union or non-union sympathizer, will help himself, push forward his business, and the loud-mouthed agitator will go to work or to jail.

With this cancer cured, free manhood will mean more friendly relations between men, closer association and more profit. Ah! who would say nay?

The lack of it, the ambition to get it and the opportunity to gain that which has been looked at, like the poor boy with sad eyes, peers at the candy in the store window with not a cent to buy. This will awaken ambition, and that means the satisfaction of one's desires, and as the little chap says, "It's jes' has to work a bit."

So with the opportunity, the will and the men, can we not all put a shoulder to the wheel and make this year, 1905, what we wish?

Let's not bicker as to who will get the big slice, but see that the cake is big enough to go around.

1905.

We are beginning another business period with the calendar year. Under propitious circumstances, with confidence unstintingly expressed upon every hand, and the earnest of prosperity already in evidence, there is no reason apparent at this time why we should not make this the banner year of America's incomparable commercial career. If every fellow in his corner will do his own part, contribute his own effort—"count for one whole unit in the line of advance," according to old Wellington there can be no doubt of the result. Big results come from big enterprises, and these are organized by big men. So it comes down to a question of the individual at last. The broader mind with wider scope for every individual is the great American idea. Promote individual effort to the limit—it's the great secret of Americanism that wins in every channel of endeavor.

How about the trial balance?

HYDRATED lime gains in popularity as it becomes better known.

WHAT trade in the world can excel ours in its healthy specimens of manhood?

THIS thing of slow collections in the stone business must change with the onward march.

STORAGE of hydrated lime at the market will make it possible to run the plant in the winter time.

GEORGIA marble for interior decorative finish has increased in volume one hundred per cent. in two years.

THERE are more building projects afoot and under consideration for the coming season than ever before.

Puck says, 1904 did not produce a statesman. Aye, sir, how about our own Madden, Meacham and others of equal note?

THE sand-lime brick manufacturers taught our trades a lesson in HARMONY, the December Rock PRODUCTS tells the story.

THE architect seems to be pretty close up to the customer; let's warm up his heart a bit and take him unto closer fellowship.

LEST we forget, suppose we start early in the year to make PROGRESS, that means more rock products put in use for building material.

THE severe winter promised has not materialized on a large scale yet, but we'll hope he don't monopolize the spring for we need it in our business.

THERE has been greater preparations than usual in many of the quarries for an early spring opening for the stripping crews worked almost up to Xmas.

Two years ago it was a hard undertaking to get a glimpse of two stone men on the same block, but it's different now. You know the consumer will pay the bill.

It is now a well established fact that cement is a preserver of iron and steel. This removes any necessity of danger of collapsing of the steel frame sky scrapers.

LIME producers in the South remind us that there is no such thing as "going into winter quarters" with them. They operate the year 'round, and report very active conditions.

SAY, the building material man's oratory will be turned loose during the next two months. Read the papers and you will be surprised how many onliest Chauncey Depews we have in our own back yard.

GENERAL confidence is the feeling in all lines of trade, and when people feel this way it spells "prosperity," the magic twin brother of "opportunity." Let us not overlook any bets in the rush of good times.

CEMENT block houses are growing in favor. Give this new industry a push; you will not have blocks scattered over the floor and every time rock products' materials replaces lumber there is more bread in the basket.

THE manufacturer who makes a contract with his customer that will not hold water, no matter whether the market goes up or down, we think needs a legal department for a few weeks, much as we are opposed to going to law.

CONTRIBUTE promptly to the circulating stream of funds which settles all the accounts of the business world. It is like casting bread upon the waters, for the other fellows will settle with somebody else *ad infinitum* until it comes home again.

QUARRY operations are practically at a standstill on account of the off season, but the offices and estimating rooms are working over-time in many cases. It's a good opportunity to map out a plan for the coming campaign and consider the questions of repairs and improvements.

BUILDERS' supply men throughout the South have experienced an exceptionally profitable season. The building operations of that section have improved both in number and in character within the last few years. No section of the country can show a comparable percentage of improvement.

THE enormous production of cement in this country can be better appreciated when a glance is taken at the statistics of the increased exports of the commodity for the past year, the multiplied demand in new uses that have appeared together with the consumption in concrete construction, which item has increased well nigh an hundred fold.

DR. FRANKLIN once advised a youth who was just beginning business as follows: "Provide the best possible article, then spend the balance of your money in making the people know about it." This is both text and sermon for the man who hesitates about advertising. The result of such a course has been too often exhibited to need further remarks.

PUSH the collections department, so as to get all your capital into active service. Capital is the blood of every enterprise. When it is healthy, in good supply and performing its proper functions the whole economy throbs with vigorous force. Sleeping capital on the books puts a damper upon expansion and enterprise, even if it does not throttle prosperity.

PROGRESSIVE business methods of to-day rest upon the principle of expansion by organizing a number of capable brains, directing their endeavors in different branches or divisions of the business. The one man "boss" idea of the generation just passed is quite obsolete in this age, and no enterprise can attain importance or even recognition among all the "big things" which is not modeled after the modern method. Think well of this in taking up the lines of work for the coming year.

AMERICA'S GREATEST BUILDING.

The Cathedral of St. John, the Divine, on Morningside Heights.

Colossal Structure Which Will Rival in Size and Beauty Anything in the Old World.

As the elevated trains swing around the high double curve at 110th Street and 8th Avenue, hardly a passenger fails to take at least one glance at a huge arch overhanging the edge of the bluff. Many, notably strangers, will take a side look as the first curve is rounded, and a more satisfying front view as the second curve is reached, and even the most indifferent citizen who sees it twice a day, at the least, can not refrain from a momentary glance to see what progress has been made since yesterday. It is the main arch of the Protestant Episcopal Cathedral,



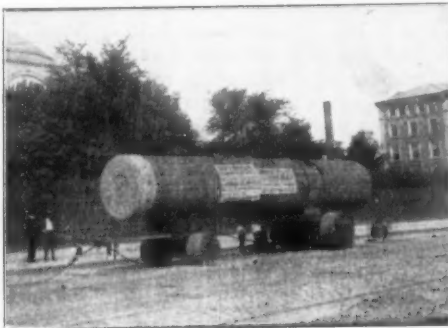
No. 1.—The great arch on the edge of Morningside Bluff, facing West, overlooking the avenue.—The immense flying buttresses are shown.

which was begun twelve years ago, and which will take many times twelve years before it is completed, and probably as many millions of dollars.

The first site selected was on 59th Street, but the rapid rise in values necessitated the procurement of a location further up town, and it undoubtedly is a happy thing that it so occurred. The beauty of many foreign churches is much enhanced by their open surroundings, and where one is closely hemmed in by streets and buildings it is a cause of regret to every one who compares it with the open site of some other cathedral, that it should be so.

In this case the building would have suffered much by being placed in the crowded heart of the city, especially as it would have been subjected to the towering competition of the big steel-framed sky-scrapers that have been carried to such a height since then.

It is a distinct gain to the beautifying of the city, and to the aspect of the cathedral itself that the present site was decided. Morningside Bluff is next to the highest point in the city and with its rising masses of rock heavily covered with



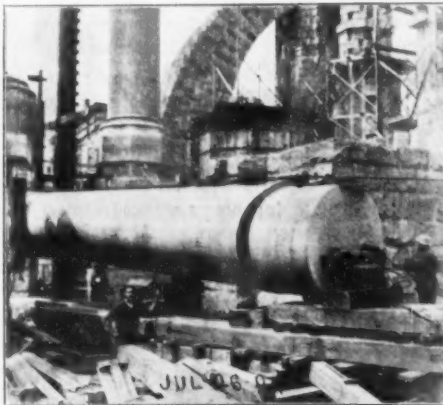
No. 2.—Lower section of one of the great columns (36 ft. long) on the specially constructed truck.

verdure and shrubbery, with the massive stairways artfully blending with the undulations of the rocky face till they are lost in the general ruggedness.

When that site was selected Mayor Hewitt said, referring to the fact that St. Luke's Hospital and Columbia College were also to be placed on the heights, that it would in time become the Acropolis of New York. It will have ample grounds around it, affording sufficient space for the Episcopal residence and parochial purposes, and yet having abundance of room for an unobstructed approach, a desideratum so dear to the heart of architects.

The project created great interest and excitement in artistic circles, and nearly seventy competitors sent in plans. The Board of Trustees, of which the Right Reverend Henry C. Potter was president, approved the designs of Heins and La Farge, and they were adopted on July 25, 1891. The architects are both young men and life-long friends, Mr. George Lewis Heins being a native of Philadelphia and having studied in different European cities, and Mr. C. Grant La Farge being a resident of Newport, R. I., and having been a pupil of the late Henry H. Richardson.

The dimensions of the grounds are, on Morningside Park front, 738 feet; 10th Avenue side, 715 feet; 110th Street side, 782 feet, and 113th Street side, 539 feet. The building will face west, with the principal entrance on Amsterdam (or 10th) Avenue. As to the building itself, here are some of the dimensions: Total external length, 520 feet; width across front, 190 feet; across transepts, 290 feet; height of central spire, 425 feet from the floor of the cathedral and 525 feet from the level of the city; width of four flanking towers, 43 feet; height of each, 160 feet; total exterior diameter of central tower, 116 feet; height of vaulting, 230 feet; height of western towers, 245 feet; total area of cathedral, 99,500 square feet. Elevation, 112 feet above tide water to floor of crypt, and 134 feet to choir floor.



No. 3.—Upper section of column 18 feet long.

The structure is planned in many details after the early Christian churches, notably the Santa Sophia at Constantinople, and St. Mark's at Venice. The central dome is surmounted by Gothic spires and the conspicuous feature of the design is in the manner in which these spires seem to grow out of the structure.

Some of its essential features are as follows:

First, a cross plan with semi-circular terminations to the choir or transept arms; a large space at the crossing as wide as the nave and aisles together; a central lantern over the crossing, thoroughly lighting the interior and dominating the exterior.

Second, the transepts arranged to contain memorial monuments.

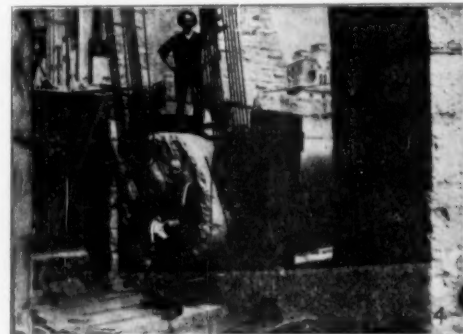
Third, all the necessary constructive features such as buttresses protected from the weather by being brought under roof.

Fourth, the walls built with air spaces; the inside lining wall of hollow brick, to be finished with painting, frescoes, mosaics, or slabs of stone or marble, with the exterior wall of cut stone.

Fifth, the vaults constructed with tiles and made to carry the roof proper, leaving the necessary air space.

Sixth, the interior following the architectural traditions of the early Church, the exterior those of the Church of England.

Seventh, the chief decoration by means of works of art of the highest attainable character.

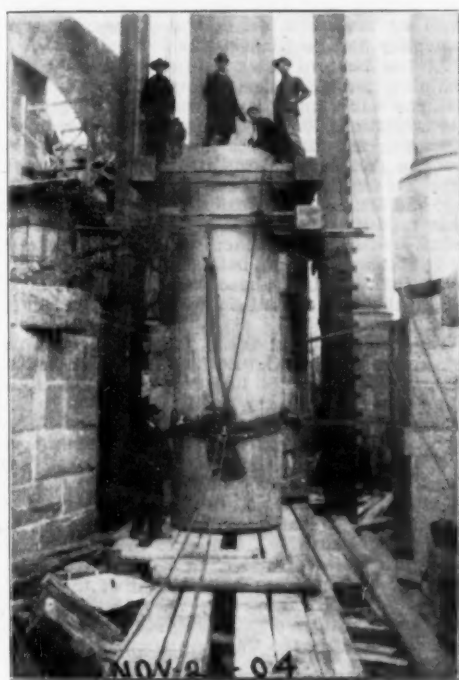


No. 4.—Another view of same upper section showing the rim left around the edge to give a hold for the clamps.

The ground alone cost nearly \$1,000,000.00, and with the beautiful building of St. Luke's now erected there together with the establishment of Columbia College and its many handsome tributary buildings, thus securing a certainty of the continuance of reserved conditions along the whole plateau.

The corner-stone was laid on December 27, 1892, just about twenty years from the time of the incorporation of the trustees. It was laid with very imposing ceremonies befitting the high character of the work. It is a block of Quincy granite 4 feet 4 inches long, 4 feet 4 inches wide and 2 feet 1½ inches deep. As far as the corner-stone goes the edifice may be said to be founded on a rock, for they reached a natural rock formation on which it was laid, but this is not so of the remainder of the foundation work as far as they have gone.

Although the hill was sufficiently rocky, yet it was not well adapted to the purpose, lying at an angle of 45 or 50 degrees with great quantities of dirt between the layers. This necessitated going down more than thirty feet under the main tower to get a proper foundation for the four great pillars which support the four arches which uphold the central tower, each pillar bearing a weight of 37,000,000 pounds, or 148,000,000 pounds in all at that point. These pillars are aided in their great holding work by the immense flying buttresses. Shale and soft rock gave much trouble



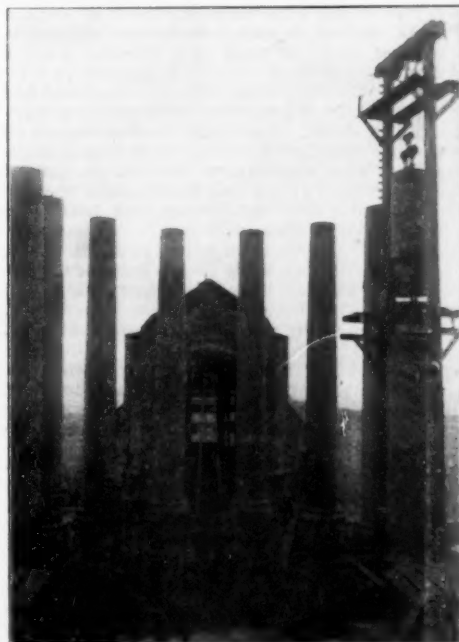
No. 5—The clamps are adjusted, they are drilling the Lewis holes preparatory to dropping it into place.

generally, so much so that at one time it was contemplated to change the position of the foundations, but all these difficulties were finally overcome.

The immense side arches which take the outward thrust of the arches of the transept and those that separate the central square from the choir and nave will soon, that is, comparatively soon, be covered in and will no longer furnish the familiar sight to the morning and evening elevated road travelers.

The grand scale on which the building is planned may be known from the fact that it covers four times as much space as St. Patrick's Cathedral on 5th Avenue, and will seat at the very least 10,000 people.

The details concerning decorations cover pages of the architects' plans. The four great piers supporting the dome are to have on the vaults four immense figures of the great prophets. The



No. 6—Another view of same upper section settling into place.

twelve smaller columns will bear representations of the lesser prophets.

The decoration of the nave will be a vast pictorial history of the Scriptures. In the entrance vestibule the story of the Garden of Eden will be told. There will also be the Deluge, the Building of the Temple, the Seven Days of Creation and many allegories.

The cathedral will include seven "Chapels of Tongues," in each of which there will be a service every Sunday in as many different languages. These chapels are placed in a semi-circle, the Belmont Chapel being in the center, the most eastward part of the entire edifice. The smallest projection at the extreme right of the cathedral shows the south three of these chapels, the Belmont not being visible, but being well on the way to completion. A realization of the immensity of the whole undertaking may be gained from the fact that the Belmont building, small as it is, has consumed 15,000 cubic feet of stone.

In the choir will be twenty pillars of large diameter reaching over 100 feet to the ceiling. The niches in eight of these pillars will afford accommodation for 250 statues, each 5 feet high.

The exterior is of yellowish granite from Mohegan on the Hudson, and which will mellow with age. Frontenac (Minnesota) limestone is used in the interior, and appears on the outside in

canopies for statues, pinnacles, finials and other decorations in profusion.

Any one who follows the growth of this immense work can realize how the great foreign cathedrals have taken so long to build, and especially is it interesting to note the difference between the erection of these massive blocked walls and the steel skeleton and brick walls of the ordinary commercial structure.

The great height of the main spire, added to by its elevated position, can best be realized when it is said that the lights within the stained glass windows will be seen by pilots many miles out on the ocean.

On the grounds is a \$25,000.00 stone mill especially erected for the cathedral work.

One of the most interesting features of the work was the placing of the eight great columns which support the roof around the chancel. They come from the Wharf Quarry, owned by the Bodwell Granite Co., at Vinalhaven, Me. The stone is of beautiful grain and texture and lies in vast seamless masses. It is possessed of great strength and takes a beautiful polish. The Bodwell granite Co. had been for years preserving this particular deposit for just such calls upon it, and getting ordinary sized stones from other parts of the quarry.

John Peirce, of New York, took the contract for the columns in the spring of 1899, and from 50 to 150 men have been constantly at work at them. To be sure of the final dimensions each block was quarried out much larger, some being got out at 350 tons in the rough, whereas the finished columns weigh 120 tons each. A special lathe,



CATHEDRAL OF ST. JOHN THE DIVINE AS IT WILL APPEAR WHEN FINISHED.

the mullions of the windows and harmonize well with the granite. The columns in the chapel and choir are of white granite from Vinalhaven. The bases of the large columns in the choir are laid in polished red jasper from Dakota and green serpentine from Pennsylvania. In some cases there is the polished Mohegan granite as a third tint of pale yellow, forming a beautiful combination. This gives the keynote to the scheme of color decoration which will make the cathedral distinguished for interior beauty.

The cathedral authorities, to be sure of a supply of stone, bought outright a big Westchester quarry and took a ninety-nine years' lease on a limestone quarry in Minnesota.

All the walls are to be covered with mosaics except where filled in with panels of exceptionally rare and beautiful marble, or other choice stone. There will be a wealth and glory of stained glass. It will abound in magnificence, and we must all be proud to think that they will not have to go abroad to get it at its best, but will achieve that result right here by using the stained glass for which some of our home makers have become so famous.

The exterior will be enriched with niches,

unlike anything in the country, was built to turn them in one piece, but that was found to be impracticable and they were made in two pieces.

They were carried sheathed in 3-inch planking on the big barge Benjamin Franklin, and when the tide was just at the right height a heavy steel cable was put around each 90-ton section, and it was rolled down the dozen pairs of skids of 12 x 12 timber, one pair resting on another, with 12-inch blocks which retarded its progress till it was brought up safely to the immense truck specially built for that purpose. Thirty-eight horses drew it to the foot of the hill, and a steam engine and hoist got it up to the grounds. The cost of the eight columns was \$200,000.00, set in place.

Mr. Davidson, the inspector on the grounds who has seen every bit of stone that has come to the work, says the big columns were put in place in perfect condition, not a chip, or dent, or the faintest blemish having marred them, and that the whole achievement was a great triumph for the Bodwell Granite Co., John Peirce and the Jones Bros., of Barre, who set them up. The pillars are 54 feet and 6 feet in diameter, the lower section being 33 feet long, and the upper are 18 feet. The weight of each of the larger sections is 90 tons, and of the smaller ones, 40 tons. It made sixteen separate pieces to be handled, and if any one will give adequate consideration to their bulk and weight he will agree that Mr. Davidson's characterization of the great job as a "triple triumph" is fully deserved.

From Our Own Correspondents.

GREATER NEW YORK.

NEW YORK, N. Y., December 31.—General building has held up pretty well during the month, making a good output for the full line of building materials, and there is a great deal of work projected along Washington Heights, helped along by the subway, which will call for large quantities of cut stone, brick and terra cotta.

Bricklayers' Union No. 7 has applied for admission to the Associated Building Trades. The bricklayers are a very conservative body of men, and have heretofore been conspicuous by their absence from any central organization.

"Diamond Phil" Weinseimer, walking delegate and ex-president of the Building Trades Alliance, got a stay with a certificate of reasonable doubt from Supreme Court Justice Miller, with bail fixed at \$10,000.00. Since his conviction for extorting \$2,700.00, he has been in the Tombs awaiting transfer to Sing Sing.

Hopeful Cement Conditions.

The cement situation has been good for the past month. There is a great deal of work in sight for the spring, the new power house, the barge canal, the Pennsylvania railroad work, as well as the New York Central and the hoped for revival of the city building interests all of which make a fine outlook for the mills. Then the high level reached and sustained for so long a time in Wall Street enabled some of the railroad companies to float a good pile of bonds and get money which will go for a general line of repairs that will make big calls for cement.

On December 25 the plant of the Wayland (N. Y.) Cement Works, near Perkinsville, was burned down, at a loss of \$200,000.00, partially covered by insurance. The plant was built six years ago. Ten thousand barrels of cement were destroyed.

The publication recently of the plan of the new New York Central depot is of much interest to the cement trade not only because of the immense area of the building itself, but also of the many tracks (about fifty), and the platforms and approaches thereto which will call for immense quantities of that material.

Mr. Hiram Snyder, 229 Broadway, said: "Just now the cement business here is running somewhat 'off' because of the winter conditions, but everything looks favorable for a prosperous new year. This year of 1904 was the biggest our Lehigh mills ever had, but the price was far below what it should have been. The demand has been good right down to date, and we have been kept right up to the mills, it being as much as we could do to allow the usual fourteen days for curing. Every mill had its over stock of 1903 to dispose of which has been a most troublesome and uncertain factor in the cement market, but they will all go over into the new year with no surplusage to clear off, and that, coupled with the good demand in prospect, makes the outlook for the trade very good. Of course the strictly local trade may be much 'made or marred' by the labor conditions, but that is a subject on which no cautious person would venture a prophecy."

At the Portland Cement Manufacturers' meeting at the Hotel Astor, last Wednesday, it was found that in comparing notes and gossip after the session nearly every manufacturer had something interesting to say about the Kent mills. It was certainly a marked tribute to their excellence that they should have been so generally and favorably talked of by practical men who have tried them.

Throwing Away the Profit.

Plaster has been going pretty well in volume of sales, but prices have been dead. One plaster manufacturer said: "I can not conceive why. There is no reason why prices should not become better other than the action of one dealer who simply throws away a profit that he might easily make, and then we must lose also. But I hope he will soon get to the end of his rope and see the error of his ways, and then the price will get better, to his advantage as well as every one else's."

News of the Lime Producers.

The Pennsylvania and Maryland cheap limes have been constantly in evidence as usual during the month. Their price attracts a grade of speculative builders to whom the 26 cents per barrel is a great object, and as long as there are builders who find that quality of lime suited to the buildings they erect, this lime will come in as fast and as long as it is wanted.

Mr. Perry, of the Rockland-Rockport Lime Co., reports a good business for the month, with a little slowing up in evidence just now which may be expected to continue during the winter months. The consumption has been very large during December, and the prices remain unchanged. The outlook is very good.

In a brief chat with Mr. C. J. Curtin regarding the year's business in Cheshire lime, he said he was well pleased with the character and amount of business done for the past twelve months. That great preparations were being made to take care of their customers and to establish the Farnham Cheshire lime in new fields for the coming year. That the public can rest assured as to the thorough business way in which orders will be handled in the office, that they will be properly taken care of under all circumstances, and that their high standard of goods and prompt and careful handling of business will be thoroughly maintained.

The Carbondale Chemical Co., of Carbondale, Pa., has issued a brief interesting circular noting the careful investigation by the Solvay Process Co. of the discovery by Mr. Thomas W. Cappon, of 881 E. 141st Street, New York, of the fact that lime containing quantities of magnesium, known as dolomite lime, has its binding or cementing power greatly improved by the use of small quantities of calcium chloride. As the Solvay Process Co. owns one of the most extensive chemical plants in the country this endorsement is especially important.

Slate Business a Little Quiet.

Mr. W. H. Kirtland, 1123 Broadway, said: "The slate business was quiet just now. There is a good output of slate in sight but the various buildings in which it is to go have not reached the point of calling for it yet, and there is nothing else new on hand. The outlook for the spring is good, estimates coming in freely. Slate is just as popular as ever in construction work and holds its own all right. The mills are not so busy as they have been which is clearly indicated not only by their readiness to take orders for prompt shipment, but in some cases by their soliciting them, which has not been the case by any means for the past year or more. There has been much more snow in Pennsylvania than up in Vermont, whereas the contrary might be expected. Should this winter be as severe as the last the mills may profit by their experience of the winter of 1903, and shut down entirely, as the mills that kept going then did so at an increased cost for the lessened output that left them no profit on the winter's work."

Cut Stone Interviews.

Things are a little quiet in the cut stone yards and when a contract comes around a number of bidders get after it pretty lively. But there are a great many estimates being called for, and judging from the number and extent of them there will be a good season next spring.

There is some friction between the granite cutters and the setters' union. The latter has caused some builders to believe that their union can handle the work better than the granite cutters, and many of them have made it a condition that the setters' union must set the blocks. This is resented by the granite cutters, who have always set their own work, and then they contend also that the work can never be so well done as when they handle it right through to the finish. There are in every yard stone cutters who are also ex-

pert setters, and this regulation would deprive them of the extra wages which they make occasionally doing setting work.

At the Bedford Quarries Co., in the Flatiron Building, Mr. Dickinson reported that the year's business was winding up very well with them. All the indications for the coming year were very encouraging and all that is needed for a very good trade in 1905 is settled labor conditions. The company has sent the last of the stone to Trinity building, and Mr. Dickinson said that it was worthy of note that it was through that building that the trouble with the stone cutters was precipitated, and yet it was the only building on which the work went right straight ahead through the troublous times, and was carried on uninterruptedly, to its conclusion.

The New York Cut Stone Trade Association has joined the National Cut Stone Contractors' Association which will hold its convention here at the Hotel Astor, on January 18 and 19.

James E. Dutton, 42 East Twenty-third Street, secretary of the Granite Manufacturers' Association, reports a steady growth and improvement in the affairs of the association.

Mr. C. W. Crosier, of the Perry-Matthews-Buskirk Stone Co., Flatiron Building, is on a visit to Chicago, and Mr. G. K. Beddoe is in charge of the office during his absence.

Mr. C. W. Walters, vice president of the Perry-Matthews-Buskirk Stone Co., was in town recently on a short visit amongst his friends, and incidentally to look over the trade situation.

Airy Indifference.

Mr. Harrison, of the Harrison Granite Co., 42 E. Twenty-third Street, said: "We have had a case recently, which certainly should be of interest to all shippers of stone. We forwarded a block which was so large that it practically amounted to a carload. It went on board in good order, but arrived in a badly damaged condition, eventually taking several hundred dollars to repair it. When, on its arrival, we saw its damaged state, we notified the road to come and see for themselves how it had been injured, which they declined to do, but they wrote us to take it off and make our claim. We ascertained that the car on which it was shipped was so dilapidated that the forward trucks broke down, and in transferring to another road the first car had to be abandoned and the stone put onto another car, in which process it received its great damage. We laid these facts before the company and received a reply which for easy indifference would be hard to equal. They admit the facts as put forward by us, but they hold to the conditions of the ordinary receipt of released valuation and reduced freight rates, and declined to consider our case, as it would 'make a precedent,' which was something that under no circumstances could they afford to do. And there the case rests at present. They absolutely ignore the point that even despite the 'released valuation and reduced freight rates,' they certainly should supply rolling stock that would hold together, and they treat it as a matter that is closed to further discussion. In another case the stays that steadied a block were knocked away or otherwise removed in transit, so that the stone was shifted around and had the casing battered off, and arrived also in a much damaged condition. Again redress was refused on the ground that they could not be supposed to exercise a police surveillance over shipments all along the route. If any one has a couple of cases which for cool, airy indifference, can beat these we would like to hear of them."

In Mr. C. J. Curtin's office, 39 Cortlandt Street, which is the Eastern depot of the American Sand-Lime Brick Co., all hands were very busy with plans of buildings already started and under way, notably a new plant of Newburgh, and another at Passaic, N. J., which will be known as the New Jersey Sand-Lime Brick Co. The machinery is practically installed in Newburgh and the plant will be in operation and furnishing brick before the middle of January, and they have a large number of orders in their books for goods to be delivered during the winter at very good prices. In addition to these they have several other plants in prospect.

Sand-Lime Bricks for the New York Market.

It will be of interest to New York contractors and builders generally to know that a high grade of sand-lime bricks will shortly be supplied to the New York market by the Schwarz System Brick Co., who have closed the contract for the erection of a plant favorably located.

Hollow Cement Blocks.

The Hollow Concrete Block Manufacturers' Convention to be held at Indianapolis, Ind., on January 18 and 19, is exciting very great interest, not only amongst those in New York engaged in that industry, but also amongst the cement manufacturers, and here and there amongst some brick men also. A good representation from this section may be confidently expected.

Amongst the Eastern concrete hollow block manufacturers who will attend the convention, is Mr. H. A. Montfort, the Eastern agent of the "Lake" Building and Hollow "Stone Patents," whose principal office is at 45 Clinton Street, New York.

Mr. Noyes F. Palmer, of the N. F. Palmer Manufacturing Co., 150 Snediker Avenue, Brooklyn, will be on hand also, probably with his working model of his cast-stone press, his only regret being that the press itself is too bulky and heavy to be conveniently handled there; but with the model he can demonstrate everything that the press will do. Mr. Palmer is an earnest advocate of the plan of "getting together and comparing notes," and he hails the coming convention as an important step forward towards lifting the fog that has hung over the hollow block business for so long and letting daylight in on the whole subject.

Mr. Arthur N. Pierson, No. 1 Ann Street, New York, the Eastern representative of the Miracle Pressed Stone Co., will also attend the convention at Indianapolis. Mr. Pierson welcomes the meeting, as he thinks it will be a suitable occasion for those interested to thresh out and lay to rest some questions that retard the advancement of the industry and hurt the interests of everyone in the trade.

Common brick has been going unusually well, and there is not one load in the city too many for the present demand. Prices are now running at \$8.00 to \$8.25 and with the prospect of a close of brick barge navigation down the Hudson the supply will probably run short and a rise in price may naturally follow. It is interesting to note that notwithstanding the labor troubles of the year, common brick closes as strong and as high as it did this month a year ago.

Will Hold a Convention of Their Own.

The Miracle Pressed Stone Co. will hold a convention of their various district managers and the salesmen connected with their different branch offices. The salesmen will number forty and there will be seven managers, New York representing the Eastern territory, Atlanta the Southern, Fort Worth the Southwestern, Chicago the central, Omaha the West, San Francisco the Pacific Territory, and Minneapolis the main office. It will be held at the home office and will last three days from January 31 to February 2. Each day there will be a reading of two papers, to be followed by general discussion, and the proceedings will close with a banquet.

Mr. Scott, of the New York Cement Stone Co., Flatiron Building, reports the outlook in that business to be excellent, the many inquiries indicating a constantly increasing interest in that product.

Wood Drills Going Abroad.

The Wood Drill Works, of Paterson, N. J., were very busy rounding out the fall season's business in an endeavor to clean up all the orders on hand and go over into the new year with a clean slate ready for the 1905 trade, which is now coming in freely. The year just closed has been the most successful year in their existence in every way. The amount of sales has nearly doubled that of the previous year, and they have been successful in establishing a number of agencies in this country, which are beginning to branch out widely, and they expect a large trade for the coming year. Their foreign trade, through their various agencies which they have established during the past year in South America and Europe, are now giving good results.

From the present situation, prospects for the coming year look very bright and they hope to equal, if not exceed, their record for the past twelve months. They are now preparing a handsome catalogue for 1905 which will soon be ready for distribution.

Ingersoll-Sergeant's Catalogue No. 36.

The Ingersoll-Sergeant Drill Co., 26 Cortlandt Street, is issuing the 1905 edition of their catalogue No. 36 of their air compressors. It contains additional illustrations, among them the Cleveland Stone Co.'s plant, the Mare Island Navy Yard compressors and other notable equipments. It also

has additional tables and illustrations of air receivers, inter and after-coolers, etc. This is the second edition of the No. 35 book, and is really the advance sheets of catalogue No. 36, which will be out in the spring or early summer, and will be the most elaborate and complete catalogue ever issued by the company. They are also at work now completing a coal mining catalogue which will be issued in January, and will be quite novel and different from anything else in this line ever brought out.

The American Air Compressor Works are now building a duplex steam two-stage air compressor for F. M. Ladd Co., of New London. It will be erected in their new sheds during the coming spring. This makes the second air compressor they have installed in this plant. When it is fully completed it will be one of the finest sheds in the New England States. The company is working in both day and night shifts to get up with orders and is now booking deliveries for compressors into June.

Dryer Installation.

Mr. D. P. Caritte of the United States Drying and Engineering Co., has just returned from a very favorable trip in the West, and now purposes going South to Birmingham, Ala., to install the company's glass-sand drier and handling machinery in a glass factory. From there he will go to Detroit, Mich., to a large beet sugar factory to inspect another of their dryers which is now being installed there. The refuse left over from these factories is a great and unceasing problem, huge mounds of it constantly lying around waiting for some effectual and profitable disposition of it. In this case the machine is to dry out the residue so that it may be used for food for cattle.

Many Inquiries Denote Business.

The F. L. Smidth Co., 39 Cortlandt Street, report a very considerable increase in business within the past thirty days, and very many inquiries, the character and tone of which indicate a good business for the coming spring. The company will soon ship there kominturs to the Lehigh Portland Cement Co., to their mill B plant at Ormrod, Pa. They will also send two more kominturs to the Alma Cement Co., Wellston, Ohio. These two kominturs are to be used instead of rolls which have been heretofore employed for grinding the clinker to be fed to the pulverizers.

Good Sales at the West Coast.

The Caldwell Bros. Co., of Seattle, Wash., are now the Northwestern distributing agents for the Pulsometer Steam Pump Co.'s well known product. The Caldwell Bros. Co. report very good sales along the Pacific slope for the past quarter of a year, during which time they have had the handling of these pumps.

Kotten Finds Larger Quarters Necessary.

Business is coming in so largely in the New York office that Mr. H. G. Kotten, 120 Liberty Street, will again enlarge his space, making more room, both for the office force and for the show room. Mr. Brown said he had a visit last week from a stone contractor from Brazil, who had furnished an immense quantity of stone to the Brazilian government, and who had come to this country to look into the matter of pneumatic tools. He was an utter stranger to Kotten and his pneumatic tools, and in fact to that industry in general, but his researches in the South and Southwest had led him along, finally landing him in Kotten's office, because, as Mr. Brown said, he found that every one spoke of the Kotten tools.

Mr. Kotten is giving out a souvenir pocket match box. Its chief interest lies in the fact that it is a trick box and it is interesting to study the expression and effort of some victims turning it around and around in a vain effort to find out how to open it. Mr. Kotten will send them to friends and customers who write for them, but the request must be made quickly as they are going off in large numbers.

Kent Mill Co.'s Machines are Lively.

Business is very good with the Kent Mill Co., at 170 Broadway. The Miller Fertilizer Co. is installing a Kent mill for phosphate work in their plant at Canton, Baltimore. The Barker Chemical Co., of Inglis, Fla., which has heretofore sold their rock outright, are now preparing to treat it for sale to phosphate manufacturers here and abroad, and for that purpose are putting up a large plant with acid chambers for the acidulation of the rock, and their grinding plant will be equipped with Kent mills. The Bonneville Portland Cement Co., of

Siegfried, Pa., have ordered Kent mills, which they will install in connection with their separators for turning out finished cement. Amongst other cement mill orders of a general character is a shipment of Kent mills for a cement plant over in South Africa.

Big Crusher Plant in Pennsylvania.

At the office of the Austin Manufacturing Co., 11 Park Row, Mr. S. F. Beatty said they had secured the contract for furnishing a complete rock crushing plant for The Marquis Stone Co., of New Castle, Pa. It is a very complete plant and will consist of one No. 8, three No. 5 and two No. 3 gyratory crushers giving an approximate capacity of 2,000 yards per day. In laying at the plant there was considerable discussion between the engineers and the parties interested as to the comparative relative merits of the suspended and the supported shaft crushers. Finally it was decided to leave it to a committee of three, appointed by the company, which body solved the question by giving an unanimous decision in favor of the supported shaft crusher as manufactured by the Austin company.

During November the Austin Manufacturing Co. installed a No. 5 gyratory crushing plant in the quarry belonging to M. J. Quinlan, Staten Island, N. Y. It replaced an older style of gyratory crusher of another make.

Lynn A. Brua, of Hollidaysburgh, Pa., has just purchased a gyratory crushing plant from the Austin Manufacturing Co., which is to be used to crush the material for the production of artificial stone.

Will Take a Rest in Florida.

Mr. Abbe, of the J. R. Alsing Co., 136 Liberty Street, is going to Florida to spend the winter. He has had so much to do that he needs a rest and recuperation, and hence his visit to the South as stated. But it will not be entirely for pleasure and recuperation, as he will take advantage of his stay to make an inspection at his leisure of the many plants down South that are fitted with his tube mills and crushing and pulverizing machinery. The business in New York will be carried on by fully competent assistants during his absence, and all orders will be attended to just as heretofore.

The Alston Stone Sawing Machine Co. is shipping a full gang with improved attachment to the Federal Hill Granite Co., Pompton, N. J.

The Traylor Manufacturing and Constructing Co. has been formed in Newark, N. J., to manufacture brick, stone and building material. Capital, \$25,000.00. The incorporators are: Bruce W. Traylor, No. 100 Bloomfield Avenue, Newark, N. J.; Lewis E. Dunkle, 36 Sherman Place, Jersey City, N. J., and P. Edwin Van Saun, Maywood, New Jersey.

Adjustable Molds for Cement.

A patent of considerable importance in concrete construction work was this week granted to Anderson Bentley, of A. Bentley & Sons, Spitzer building, Toledo, Ohio, through his attorneys, Owen & Owen, and bids well to reorganize this class of work. The invention relates to the molds used in reinforced concrete construction for the formation and uniting of beams, columns and brackets and the like, into a single, integral or united mass, whereby the weak points and cracks at the connections of such beams, columns and brackets incident to the means heretofore used in the formation of such work, is avoided. Other objects of the invention are that it is easily adjustable for the formation of columns and beams of different sizes and lengths, and readily knocked down after a formed column or beam has hardened, to enable it to be repeatedly used for the same class of work. This mold was used in the construction of the new J. M. Bour building, as well as others in this city and Cincinnati, and has given the best of satisfaction in all cases.

New \$400,000 Office Building.

New York City.—It is reported that Mr. H. A. Hutchins, of The Standard Oil Co., New York City, has filed plans through Architect C. P. H. Gilbert for an eleven-story studio and office building to be built at the southeast corner of Fifth and Thirtieth Streets. This building will occupy a plot 50x125 ft. directly opposite the Union League Club. The facades of the structure will be of marble, white brick and terra cotta. The construction of same will commence at once, and the building will cost \$400,000.00.

PHILADELPHIA, PA.

PHILADELPHIA, PA., December 28.—The end of the year has come with most people engaged in the manufacture and sale of house building material fairly well satisfied with the year's business and hopeful that the New Year will be much more satisfactory.

As already shown in this correspondence, 1904 has been a record-breaker in the matter of building residences and small business houses.

In lime, roofing and brick business has been good. The stone cutters have also had a satisfactory trade. Heavier construction has not been so extensive, and the cement trade has been the most unsatisfactory in the history of the business in this country. Some cements have sold as low as 60 and 62½ cents per barrel, and much of the time 70 cents has been pretty near to the top of the market.

The end of the year finds the situation improved and cementmakers are hopeful for much better business in 1905. Already prices are better. It is not easy to buy the better grades for less than 75 cents, and some manufacturers are asking more. During the last two months there have been heavy sales, and the general impression is that there is no surplus of stock. One manufacturer with an agency here has turned down a considerable order during the last few days, because the stock was not available for immediate shipment. So far as is now known there will be no general shut down of cement plants during the winter months, though there has doubtless been a production below capacity in most Eastern mills for some time past.

The Panama Canal Cuts no Figure.

The Panama canal is not attracting much attention here. The New York ship canal is regarded with much more interest. Some cement men here expect this work to take a large part of the New York State product next year. This, of course, would mean much less competition in general business.

One of the biggest jobs in prospect in this immediate vicinity is the elevation of the Pennsylvania Railroad tracks in Camden. Bids for this work are already in, but the contract has not been awarded.

The American Cement Co., of which Robert Lisle is president, reports business as fair. This company does a great part of the Pennsylvania railroad work, and with the big terminal improvements in New York will probably have a market for the greater part of its product. It will also furnish the first 10,000 barrels of cement for the Panama canal.

The Vulcanite is furnishing the Philadelphia subway.

Mr. Stewart, of the Coplay Co., reports improvement in business. Inquiries are coming in and there seems to be good prospects for greater improvement in the near future.

Mr. Ball, of Charles Warner Co., said the lime trade is quiet, this being the dull season. This company is also sales agents for cement, sand, lime, brick and other materials. The general situation was reported as much more encouraging. "We are having as many inquiries for cement as we have ever had at this season of the year, and I think prices are going to be better."

Stone Contractors All Busy.

The stone cutters are as busy as they could reasonably expect to be at this season of the year. All the plants are at work, and inquiries are coming in for new work. A careful investigation shows that while there is no difficulty in securing stock, there is no surplus of stone in the yards here.

The Charles Warner Co. has recently put on exhibition, in the Builders' Exchange, a unique striking display of sand-lime brick. It consists of a mantel and fire-place made entirely of their brick in a variety of shades and colors, very artistically arranged.

Advanced Cost of Building.

The cost of construction of two-story dwellings in this city has gradually increased nearly 36 per cent. In the last ten years, as is shown by the following:

Year	Dwellings Erected	Total Cost	Cost per Dwelling
1895.....	4,955	\$ 7,228,735	\$1,458
1904.....	5,860	11,613,045	1,981

These figures refer only to the cost of the buildings, and do not include the value of the land. Operative builders say that this increased cost is due principally to the fact that they are forced to pay mechanics more in the building trades and to an advance in the cost of material.

Brick Goes Up.

Salmon brick, which formerly cost from \$4.50 to \$5.00 a 1,000 is now quoted at \$7.00 a 1,000. Stretcher bricks have jumped from \$6.50 to \$11.00 a 1,000. On an average 20,000 bricks are used in a two-story dwelling, and the cost of laying them has increased in the last ten years from \$4.50 to \$6.25 a 1,000. The cost of plastering a house of this kind has increased from \$70.00 to \$110.00. Plumbing has increased from \$100.00 to \$130.00. Lumber has increased 50 per cent. There has also been a big increase in the cost of laying stone for foundations. Unskilled labor in building construction also receive from 25 to 50 cents a day more than they did formerly. The pay of carpenters has gone up 40 per cent.

287,558 Dwellings Here.

Including the figures for the year, Philadelphia can truly be called a city of homes. There are now 287,558 dwellings within the confines of its forty-two wards. Assuming that the inhabitants number 1,400,000, the proportion to a dwelling is 4.868. No other city in the world, it is said, can show so many dwellings occupied by single families. The ratio of persons per dwelling is also lower than in any other municipality.

THE BUILDING OPERATIONS.

Reports from contractors and architects show continued activity in plans for building. Some of the more important operations follow:

Henderson & Co. were awarded a contract yesterday for a group of buildings at \$200,000.00 for a State Sanitarium for Tuberculous Diseases at Glen Gardner, Hunterdon county, N. J.

The Navy Department has awarded the contract for completing the big granite dry dock at the Mare Island Navy Yard, near San Francisco, to E. M. & G. M. Scofield, of Pittsburg and Philadelphia, for \$1,385,000.00.

The docks building at Philadelphia and San Francisco are among the largest in the world, being of a size sufficient to take in two big ships at the same time, and costing considerably more than \$2,000,000.00 each.

Charles Gilpin has been awarded a contract for an office building in the burned district in Baltimore, to cost \$750,000.00. It will be a fifteen-story fireproof structure, covering an area 100 by 104 feet. It will occupy the site of the Baltimore and Ohio office building, at the northwest corner of Calvert and Baltimore Streets.

The Bell Telephone Co. will shortly make estimates for a telephone station at Fifty-second Street and Lancaster Avenue. It will be of the Colonial style of architecture, two stories high, with a basement. The dimensions will be 50 by 100 feet.

Edgar V. Seeler, the architect, has plans nearly completed for a \$400,000.00 library building in Williamsport. It will be known as the Joseph V. Brown Memorial Library. It will be two stories high, of the French Renaissance style, with exterior walls of white marble. The dimensions will be 139 by 75 feet. Estimates will be invited early next year.

Unique Trains for Salt.

There are in Germany unique railway trains that have been constructed for carrying salt, from the salt mines at Stassfurt. The engine is run by electric power and each train consists of thirty trucks. These trucks have a capacity for one-half ton of salt. These are probably the only trains of their kind in the world and run automatically. As a train approaches the station a bell is rung by electricity which notifies the station attendant who turns a switch to receive it. In starting the train, the attendant mounts the engine, switches the current and the train goes merrily on its way. A peculiar feature about these trains is the fact that there are no attendants, either engineers, guards, or anyone else.

BALTIMORE, MD.

BALTIMORE, MD., December 31.—Baltimore has already made great progress toward recovery from the disaster of last February, and will begin the new year hopefully. The rebuilding, though well under way, is expected to be much more extensive in 1905 than in 1904. Much time has been consumed in clearing away the wreck and debris of the great fire and in preparing plans for rebuilding.

The unprecedented demand for warehouses, dwellings, vacant lots and suburban property is a good omen for the coming year's prosperity for Baltimore, as it is an established fact that whenever the desire is to invest capital in real estate preferably to stocks, bonds, etc., it always rebounds to the benefit of other mercantile interests.

Comparative Glance at the Building Situation.

John M. Henry, secretary of the builders' exchange, made the following statement to-day:

"The past year has been the largest in building operations on record. According to the records kept by the Builders' Exchange, the largest amount expended in buildings prior to this year was in 1902, when about \$12,000,000.00 was expended. This included business houses, dwellings and other properties. In 1904, however, this amount of money has been almost nearly equaled in the burned district alone. The year 1902 was a splendid year. The prospects for 1903 were promising, but unreasonable demands on the part of labor organizations and high prices of material tended to retard building operations, and the year was a disappointment.

After the fire Baltimore was the center of attraction in the building world. About fifty general contractors and many more sub-contractors were attracted to Baltimore. Of this number, about one-half have found more or less work and are still in the city.

Baltimore is not slow by any means, as will be seen by taking a bird's eye view of the burned district. It is wonderful the amount of work that has been done since last March, when the first building permits in the burned district were issued. The class of buildings being erected are, as a rule, very substantial structures. Some of them are unnecessarily so.

The indications for 1905 are for a still larger amount of work than has developed during the past year. The work of this year has been mostly factories, warehouses and other business structures. While this work generally has been very substantial, we look for a finer class of work next year, such as hotels, office buildings and other similar structures.

Details of Baltimore Construction.

Building Inspector Preston's summary of work done during 1904 is as follows:

Issuance of permits for—	
15 churches—valuation named.....	\$237,900.00
5 banks	298,000.00
3 hotels and apartment houses.....	149,500.00
8 office buildings.....	2,373,000.00
559 stores, warehouses and manufacturing buildings.....	8,077,368.00
997 dwellings	1,261,220.00
518 additional improvements.....	438,089.50
9 hospitals	129,500.00
2 theatres	91,000.00
1 school	2,300.00
	\$13,057,877.00

To this should be added at least 20 per cent for undervaluation..... 2,611,575.40

Total\$15,669,452.40

Seven hundred and forty-four sets of drawings for buildings were examined, 354 sets of which were for buildings in the burned district.

Another Hollow Block Co.

The Eau Claire Concrete Co., Eau Claire, Wis., has been incorporated with a capital stock of \$30,000.00, for the purpose of manufacturing hollow concrete blocks and ornamental stone of every description. J. W. Ross is at the head of the organization, and the subscription of the capital stock has advanced to such a stage that it is certain that the entire amount will be subscribed. The famous sand hills of the vicinity will thus be turned into a useful and needed commodity.

SYRACUSE, N. Y.

SYRACUSE, N. Y., December 25.—A deal has been closed whereby a large Portland cement plant will be established a short distance southeast of this city. The Wayland Portland Cement Co., of Wayland, N. Y., has bought the Robert Dunlop property in the town of DeWitt, valued at \$60,000.00. The deal was closed by Spencer & McCarthy, of the Jamesville Milling Co., representing the Dunlop estate and Duane Thomas Millen and W. H. Wiltse representing the cement company. The estate bought consists of over 700 acres, located on the D. L. & W. railroad and splendidly situated. The property is at present occupied by flour mills, which will be torn down. It is said that the new plant will be larger than that at Wayland. The property contains valuable deposits of gypsum and lime necessary for the manufacture of cement. The company expects to begin operations in time to be ready for some of the barge canal business. It is said that the men now interested in the plant with Philadelphia capitalists will form a corporation with \$750,000.00 capitalization to carry on the manufacture of cement.

The Onondaga Litholite Co. has purchased of Grove E. Warner the property at North West and Tracy Streets for \$34,000.00, and will establish a new plant there for the manufacture of artificial stone and various litholite products. The litholite company is now located in the old glass works plant. That plant has been purchased by a new tin can company which intends to move here, and the litholite company will move at once.

The Onondaga Pressed Stone Co. has leased the entire first floor of the Heffernan Building at Canal and Catherine Streets and will move in at once. In this place the company has a floor space of 10,000 square feet, and the capacity of the plant will be 30,000 blocks per month.

J. B. Wadsworth, of Cleveland, Ohio, has been making tests of the limestone found at Half Way, in the town of Elbridge. Great secrecy has been maintained in the operations but Mr. Wadsworth admits that he has been making tests with a view of establishing a quarry for an iron and steel mill in another section of the country. He has secured an option on the Van Camp farm and adjoining property. It is said that if the tests turn out satisfactorily, Mr. Wadsworth will establish a quarry at once and transport the stone from the ledge to the New York Central tracks by means of an overhead bucket system or a steam railroad. Mr. Wadsworth has been staying at Auburn, and making daily visits to the property.

The Blue Ridge Mica and Mining Co. has been formed at Watertown to operate in Georgia. The capital is \$150,000.00, and the directors are: C. H. Walts, L. C. Mitchell, W. S. Sprague, Charles W. Howard and Charles S. Kellog, of Watertown; Charles Petrie, of Evans Mills, and James H. Helmer, of Atlanta, Ga. The company was formed after an investigation of the deposit was made by Prof. Philip H. Schneider, of Syracuse.

David Hyman, of Rochester, who, on November 15, purchased the St. Lawrence Marble Co., at Gouverneur, from Milo M. Belding, of New York, has closed a contract with the St. Lawrence Transmission Co. for electric power to be transmitted from Massena to Gouverneur over a power line which that company proposes to build in the spring. The new power line is to be built at a cost of \$500,000.00.

A car loaded with five complete gangs recently arrived at the plant of the Gouverneur Marble Co., at Gouverneur, and they are now being installed under the supervision of Lewis Beardslee. The Corliss engine is expected soon, and the plant will be in operation by January 8. Fred Haverstock, who has been in the service of the company for many years, has resigned and begun work for the Rylstone Co.

The Solvay Process Co. has presented the exhibit which it had at the St. Louis Exposition to the National Museum at Washington, D. C. It will be a permanent exhibit in the Museum.

Lyman C. Smith, F. B. Scott, Duane Millen, William H. Wiltse and Charles A. Lockard, of this

city, attended the meeting of the National Association of Portland Cement Manufacturers in New York.

Four miles of pavement will be laid in Syracuse the coming year, according to the plans of the city engineer, F. J. Schnauber. Brick and asphalt will be the material.

W. K. Squier, of this city, has returned from the meeting of the National Association of Sand-Lime Products at Cincinnati. He was elected president of the organization.

The W. & J. Littlejohn Granite Co. has been formed at Seneca Falls with a capital of \$40,000.00 to deal in stone products. The incorporators are: A. J. and L. J. Littlejohn and A. F. Stahl.

The Stella pyrites mine located about a mile from Hermon, which closed down about four years ago on account of the failure of the company working it, has been sold to a mining company which will start operations again.

The New York Mining and Development Co. has been formed by a number of Fort Plan men to operate mines in Jamestown, Col. The officers are: President, F. W. Bander; vice president, F. J. Ehle; secretary, L. A. Duncle; treasurer, J. V. Vibbard; resident manager, H. H. Barbee; managing engineer, Bernard Granville.

The Celladon Tile Co., of New York, has the contract for the roof of the new Smith College of Applied Science.

The Onondaga Litholite Co. has taken up a new branch of manufacture, and will hereafter make hollow building blocks, and it is expected that this branch of the business will become an important one.

The Just Mining and Extraction Co. recently held its organization meeting in this city and elected the following officers: President, former United States Senator Richard F. Pettigrew, of South Dakota; vice president, Maj. J. M. Reynolds, of Elmira; second vice president, James S. Graham, of Rochester; secretary and treasurer, W. W. Robacher, of Rochester; scientific director, Dr. John A. Just, of Syracuse. The company is establishing a plant in the Schoeneck Building in this city where experiments are being carried on. The company owns a process of extracting metals from ores which, it is said, will revolutionize mining.

The plant of the Empire Portland Cement Co., at Warners, has been shut down for the winter and will not reopen until March. Men are at work on the annual repairs of the plant. Eighty-five men were laid off for the winter.

The Onondaga Pottery Co., whose plant is located in this city, has received the award of a grand prize for a full line of decorated tableware. The exhibit has first place among the pottery exhibits of the country, and the display was well arranged in the New York division of the Mines and Metallurgy Building. The exhibit was located near that of the Solvay Process Co.

Work on the new plant of the Gouverneur Marble Co. is practically completed. The new mill is built on the site of the one which was burned.

The Rylstone Marble Co.'s plant is now running at full capacity.

Arthur Littlejohn, who recently established a plant at Seneca Falls for the manufacture of concrete blocks, reported to the police that some person had pulled down a pile of newly made blocks causing considerable damage.

W. H. Larrabee has been appointed sales agent in Central New York for the Retsof Mining Co.'s rock salt, and will establish headquarters in this city. Mr. Larrabee has been connected with the International Salt Co.

Manning C. Palmer, former president of the American Exchange National Bank, was recently arrested on the charge of loaning money to the Adamant Plaster Co., when that concern was known to be bankrupt. He is now out on bail. Mr. Palmer was said to have had an interest in the plaster company.

Installed a New Kiln.

The Rochester Lime Co., of Rochester, N. Y., put in a new kiln last winter along the lines which Mr. F. C. Lauer's experience suggested would be the best. The kiln has only been running a short time, but by the time of the next National Lime Manufacturers' meeting, Mr. Lauer will probably be able to tell us something about it. They expect to build another kiln in the near future, modifying it if this one is not entirely satisfactory.

CHICAGO, ILL.

CHICAGO, ILL., December 26.—The year 1904 is almost a back number at this writing, but what has been accomplished during its course of twelve swiftly passing months has told magnificently for the good of this city, and permanently left its impress on every side where the hands of industrial activity have plied their remarkable work. In all the lines of industry to which Rock Products has so faithfully devoted its best energies during the past year, there has been a most marvelous improvement over that of 1903. The prognostications of all who deal in any form in building materials have more than been realized, and a great prosperity has resulted to those who handle or deal in these materials. The building trades have pursued the brisk and even tenor of their way without let or hindrance all the spring, summer and autumn months. Each and every month favored working progression, and no strikes of any consequence at all have been manifest in any of these allied industries.

While in some other cities, notably New York, building and material men have suffered and met untold delays and serious losses through the turbulence of labor, Chicago's ways in these lines have been ways of pleasantness and all her material paths have been paths of peace. This most happy season of quietude ought to bring serious reflections to all employers and laborers, to both the skilled and unskilled mechanic and artisan. That unity in labor is conducive to the greatest welfare of all, and that strife and enmity rob the laborer of his toil and bring the investment of capital to a serious halt.

A Year of Unusual Activity.

During the past eleven months of the year building in Chicago has been exceedingly active, and even now, during the last month of 1904, is still making progress in finishing up the work previously done. The year's work here, not including December, shows a gain of almost \$10,000,000.00 over the corresponding period last year. During the eleven-twelfths of the year permits have been taken out for the construction of 6,772 buildings, fronting 200,683 feet, involving a cost of \$41,570,940.00 as against 5,790 buildings, fronting 164,192 feet, involving a cost of \$31,676,950.00; a gain this year, so far, of 982 buildings, 35,491 feet of frontage and \$9,893,990.00 in cost. November was a record breaker, permits being taken out for the construction of 631 buildings, fronting 19,990 feet, involving a cost of \$5,785,150.00, as against 564 buildings, 15,777 feet frontage and a cost of \$2,965,080.00 for the corresponding month a year ago.

So far this month, up to the 23d inst., upwards of 200 permits have been issued, involving a cost of over \$2,000,000.00. The weather has favored all building operations, no severe weather having as yet been experienced. A number of buildings to be erected next year will be very costly, more so than any yet erected here, save the government building, which has now been ten years under way.

A report was circulated a day or two since that the Pennsylvania railroad intended at once to enter upon the construction of a \$30,000,000.00 union passenger station at Canal and Adams Streets, but there is absolutely no basis for such a report, and there is no indication that such a structure will be built next year or the year after. This denial comes officially.

Quiet in Building Materials.

Interviews with a considerable number of the largest houses engaged in handling building materials, develops nothing especially new at the present time. The holiday time is here, and generally the leading trades report an "off" period. But dealers in all kinds of rock products are very sanguine as to the near future, and a number of sagacious men anticipate during the next few years the greatest building activity the city has ever known. The tunnels now built and others under way, which will be pushed to completion with the greatest speed, reaching out to all the prominent business buildings in the city, and to all the depot and transportation lines will lessen the cost of building. These tunnels, large and solidly built, cover now some thirty miles under the streets in the downtown section, and will be extended to the west and north sides of the city. These tunnels, for transporting the excavations of buildings, large

and small, will, it is said, cheapen construction greatly. The tunnels are not only prepared to haul that material, but can carry cement and stone, brick, etc., and mix concrete in the mounds ready for use. The expensive business of teaming all these materials to points of delivery will soon be done away with, and thousands of teams will no longer congest the business thoroughfares.

Hereafter every building will have its sub-basement constructed with the tunnel system. The time is coming when the bulk of the teamsters will not use the power of their unions to enforce their demands through a strike, and some of them are beginning to see the handwriting on the wall which will partially paralyze them. The tunnels are going to revolutionize some things which have now become almost intolerable.

Another thing builders and material men see as significant of good and prosperous times ahead, is the improvement in the iron and steel trades, and they have put all doubts as to its permanency aside. The advancing prices from \$1.50 to \$3.00 a ton on leading lines of materials, looks favorable for better days ahead, even though prices will carry up somewhat the costly skyscrapers of iron and steel construction. Purchases of this class of material have continued heavy since last October, and the markets are firm.

Bitulithic Pavement to Be Tried.

Among the pavements talked of is the bitulithic as suitable for some of Chicago's streets. Where laid in Boston it is said to give satisfaction, and the Board of Public Improvements are disposed to give it a trial. Inasmuch as the Good Roads Association of America favors this pavement above all others, the trial of it here will be made in the spring. It is said to be preferable to macadam. Many of the pavements here of granite, asphalt, brick and macadam are in a bad way, and a call for over a million dollars has been sent to the council for this purpose.

After burrowing in the ground for months past and gaining a foundation strong enough to support a good sized city, the Majestic Theater here is beginning to look upon its surroundings. The foundations are of concrete, the largest and deepest under any building yet erected here, and involving the expenditure of a vast sum of money.

Mrs. Necher, the owner of the Boston Store on State Street, has just completed and paid for all the ground wanted on which to erect the new buildings, and work on the foundations will be commenced in the near future. This building is to cost the sum of \$5,000,000.00. The foundations will be deep and very solid concrete will be used, and an immense quantity of it.

The spring will probably witness the commencement of work on the new Marshall Field museum, to be built on the lake front in Grant Park. This building is to cost \$10,000,000.00, and will give the granite, stone and iron and steel men a big job. The new Crerar library building is also to make a start in the early spring, and to be located in the same park. This also will cost about \$3,000,000.00. Foundations on both buildings will be of concrete, and it will keep the concrete men busy for months. No teams will be used in hauling most of the heavy materials (iron, steel, stone, brick, etc.), to these buildings; all materials will be delivered through the tunnels. The same will be the case in supplying materials to the new Boston Store.

At the new postoffice building the finishing touches are being put on the architectural work of the interior columns. The capitals surmounting the columns are massive in weight as well as in size. There is nothing unique in this, but there is in the fact that they are manufactured in the building and are made of fine cement. Finished, each looks as if it had been made of granite, all chiseled out of a big, rough block. The work is done with sectional molds which, after the cement is pressed into them, are opened, disclosing the artistic form of the capital.

Possible Labor Trouble.

Building men think they see some trouble coming to them in May next in the new wage scales for fifteen building trades unions, representing 20,000 workmen, which will be decided on within the next sixty days. Several of the unions have practically decided to renew the present scales, but they will ask for concessions regarding working rules. Some of the builders think that the wage question will be settled as soon as possible in order that building operations be not retarded.

The Illinois Brick Co. was incorporated in 1900. It has \$4,000,000.00 of preferred stock and \$5,000,000.00 of common. No dividend has ever been

paid on the common. The brick market is quiet just now, with prices at a range from \$7.00 to \$8.00.

The business of the Allis-Chalmers Co. is reported to be improving at a splendid rate.

The new \$1,000,000.00 hotel to take the place of the present Morrison hotel, southeast corner of Madison and Clark Streets, is to be a handsome building, and will start upwards next spring. The hotel offices and corridors will be floored with marble, and the heavy and ornately decorated ceilings supported by stone columns. All the stairs will be marble and steel. Mahogany will be the wood-work throughout.

The gravel season is over, and all the pits are closed down. The market is inactive. Nothing doing in sand, and lime is also quiet at 70 to 75 cents per barrel. Cement and concrete work is practically held in abeyance, on account of the cold weather. It is a mild winter though, so far, and raining at this writing.

Theodore W. O'Connell, of this city, died on Christmas day at the West Side hospital, after an operation for appendicitis. He was 28 years old. Mr. O'Connell was the son of the late Thomas O'Connell, a pioneer resident of the West Side. He was treasurer of the Artesian Stone and Lime company.

Jacob Lauer & Son, from St. Paul, were in the city this week looking up some additional machinery for their quarries at St. Paul. The Lauers are very prominent in the stone business in the Twin Cities—have a large and deservedly popular trade in both cities. They have a reputation of delivering the goods right on time and always doing exactly as they agree. This is the characteristic feature of their business, which brings new trade. Mr. Lauer is educating his two sons into the business so that he can take it easy later on.

Our breezy, popular friend, H. M. Dalton, of Hopkinsville, Ky., and Princeton, Mo., was in town the other day doing a little Xmas shopping on his way home to Hopkinsville. He reports both the plants running full blast and prospects for broken stone business for the coming season first class.

The Contractors' Supply and Equipment Co. report a number of good orders for the popular Smith concrete mixer, new and second-hand crushing plants and other equipment. They have just sold a large plant, consisting of No. 7½ Gates crusher, elevator, screen and engine and boiler, to A. B. George, of Gillman, Mo., for his ballast plant on the "Q."

Mr. W. H. Wright, of Castalia, Ohio, was in the city looking up machinery for a stone and lime plant to be located at Lakeside, Ohio. This company has a large deposit of marl in addition to their stone property, and will, no doubt, put in a Portland cement plant later on.

W. G. Fargo, of Jackson, Mich., who has a large dam to build at Bay City, was in the city the other day looking up machinery for his concrete work, purchased a pile driver from the Vulcan Iron Works, in addition to some other equipment to be used on this job. Mr. Fargo expects to be very busy on this job for the next six or eight months.

Cement Age Coming Next.

A. V. Boswell, who has been in the iron and steel business in Joplin, Mo., for several years, has sold out his business to the steel trust, and will live in Kansas City in the future. Mr. Boswell has quit the steel business to enter the cement business. He says that the rapid increase in the use of cement in buildings, bridges and in railroad construction is hurting the steel business greatly, and will, in time, work great damage to the interests of the Steel Trust.

"Six years ago," said Mr. Boswell, "I attended a banquet of steel men in Pittsburg, held behind closed doors. At that banquet one of the best posted steel men in the country predicted that a substitute would have to be found for steel and iron before long. The subject of a paper he read was: 'What material Will Be Substituted for Steel?' I realized that cement was the coming material for building and much railroad construction, so I have sold out my steel business to enter the cement business."

"When Thomas Jefferson was President we entered the wooden age," continued Mr. Boswell. "When Abraham Lincoln was elected we entered the steel age. To-day we are in the cement age. In the increase in the use of cement for all building and construction purposes I think I see the eventual fall of the steel trust."

THE TWIN CITIES.

MINNEAPOLIS, MINN., December 31.—Active building operations have been reduced to a minimum by the cold weather and the arrival of a fall of several inches of snow, making the work now being done largely indoor work.

The preparations for the coming season are hardly yet in shape to be announced, as the holiday time is generally a time when preliminaries are not yet closed, but the general outlook for a good season was never better than it is right now. The fact that the expectations for the early spring are strong is evidenced by the firm position held in prices on the various articles entering into the make-up of buildings. On all classes of materials, brick, stone and the like, prices are stationary and firm, with no pronounced indication of change.

Cement Users' Convention.

A call has been issued for a convention of the manufacturing users of cement in the Northwest, to be held in Minneapolis, January 24, 25 and 26. The convention will include manufacturers of concrete blocks, sidewalk tiles, cement brick, concrete construction in all forms, tile, etc. Every form of construction and manufacture using cement will be given a hearing and consideration at this meeting.

Space has been arranged for on the fourth floor of the great courthouse and city hall building. The program is only in the course of arrangement and can not be given at this time, but as partially planned it will include addresses from architects and engineers of standing upon subjects in line with the objects of the convention. An attendance of five hundred, including all manufacturers' agents and convention members, is confidently anticipated. Architects are especially invited to attend the meeting to confer with manufacturers of concrete block to reach some satisfactory basis for specifications as to the quality of stone, size and other details.

Among the manufacturers who have arranged for space for exhibits are the following: Miracle Pressed Stone Co., Minneapolis; Concrete Machinery and Cement Co., Minneapolis; Libby & Nelson, Minneapolis; Stewart Cement Block Machine Co., Waterloo, Iowa; Marquette Cement Co., Chicago; Guarantee Cement and Stone Co., Minneapolis; Clyde Iron Works, Duluth, Minn.; Indestructible Post Co., Chicago; A. D. Mackay & Co., Chicago; Superior Manufacturing Co., Minneapolis; The Building Block Manufacturing Co., Minneapolis, and others.

Complete information may be secured on the arrangements and plans for the meeting by addressing J. W. Cooper, chairman, 615 Lumber Exchange, Minneapolis, or H. A. Rogers at 912 Lumber Exchange.

MINNEAPOLIS BUILDING NEWS.

C. M. Way will erect a handsome brick residence in Southeast Minneapolis, 50x60 feet in size, at a cost of \$15,000.00. Harry W. Jones is the architect.

One of the most elaborate buildings in prospect for Minneapolis is hardly in shape for more than a general reference, the pro-cathedral to be erected by the Church of the Immaculate Conception (Catholic), at a commanding site at Hennepin Avenue and Sixteenth Street. The headquarters of the diocese are in the sister city of St. Paul, where a cathedral costing \$1,000,000.00 is planned and funds are being pledged.

F. D. McMillan will erect a brick store building at 822 and 824 Hennepin Avenue, to be 27x108 feet in size, two stories, of pressed brick and cut stone. Pike & Cook have the general contract for the work. John N. Jager, architect. Cost \$10,000.00.

J. H. Fisher & Son have the general contract for an entire remodeling of the building at 259-261 Nicollet Avenue, corner Third Street. The Great Northern Railway will have its city ticket offices on the ground floor. The changes will cost \$20,000.00. Mark Fitzpatrick, of St. Paul, architect.

Nicollet Lodge, A. O. U. W., is arranging for the erection of a lodge-building near Central and University Avenues, to be of brick and stone, three stories, costing about \$25,000.00.

The Nelson Paper Co. will erect a one-story building at its plant, 400 Marshall Street, Northeast, to be of brick and cut stone, costing \$8,000.00. Arnold & Kaercher, architects.

The regents of the State University will ask the legislature, which is about to convene, for an appropriation of \$425,000.00, for the erection of a new science and art building, which will be entirely fireproof. C. H. Johnston, of St. Paul, State architect.

A large modern brick veneered residence will be erected on Dell Place in the spring to cost \$10,000.00. James Alan MacLeod, of St. Paul, architect.

Plans have been prepared for a handsome fireproof building to be erected at Fourth Street and Second Avenue, South, by William Deering, the Chicago harvester manufacturer. F. B. & L. L. Long are the architects. The plans provide for an eight-story structure about 132x157 feet in size, of pressed brick, cut stone and terra cotta construction, modern construction throughout, steel beams and columns, plate glass, ornamental iron work, marble and encaustic tile work, wire lath, power and light plants complete, etc. It will be an office building and the first floor is to be equipped for quarters for the Security Bank of Minnesota. The building will cost complete about \$500,000.00.

ST. PAUL BUILDING NEWS.

Stephen Silbermann will erect a flat building on Capital Boulevard near Como Avenue, two-story and basement, 28x53, of concrete blocks. Cost, \$6,500.00. William Porton & Co., contractors.

Mark Fitzpatrick, architect, prepared plans for two additional stories to the Stronge & Warner Co. building at Seventh and Minnesota Streets, to be of pressed brick and cut stone.

Louis Lockwood, architect, has completed plans for the elaborate wholesale building for Farwell, Ozmun, Kirk & Co., wholesale hardware. The building will be nine stories, 152x261 feet, of mottled pressed brick and cut stone trimmings on all outside walls. The plans called for bids on both mill construction and fireproof. The basement will be equipped with railway trackage and wagon room. The work is to proceed in the early spring and the cost of the building is placed at \$400,000.00.

The Young Men's Christian Association will revise the plans prepared for a new building to bring the cost within \$150,000.00. Clarence H. Johnston, architect.

A final appropriation of \$350,000.00 has been approved at Washington for the construction of the big stone tower on the new postoffice and custom-house in St. Paul, and interior work.

Matt Gallagher, of Minneapolis, expects to erect a theater in St. Paul similar to the one recently opened in Minneapolis, which will also be called the Unique.

The owners of the Sherman house have announced their intention to erect a fireproof building upon the present site, to contain about 100 rooms, with every modern convenience and equipment.

OUTSIDE WORK BY TWIN CITY ARCHITECTS.

M. P. Thorl, architect, St. Paul, has plans under way for the new chapel building for St. Olof's college at Northfield, Minn., and they will be ready for figures about February 15.

Plans by Buechner & Orth, architects, of St. Paul, have been adopted by the county board of supervisors of Pierce County, Wis., for a new courthouse of Ellsworth. It will be of brick and stone, two story and basement, fireproof construction complete, fireproof vaults, marble and encaustic tile work, etc. The old courthouse is to be remodeled into a jail and sheriff's residence. Cost \$85,000.00.

A. F. Gauger, architect, St. Paul, has plans for an addition and improvements to the Hotel St. Hubert at Milbank, S. D., to cost \$18,000.00. It will be three story, 40x76, of pressed brick and cut stone.

Buechner & Orth, architects, St. Paul, have plans for a Catholic church for Norwood, Minn., to be of pressed brick and cut stone.

Bell & Detweiler, architects, Minneapolis, have plans for a courthouse for Grant County, Minn., to be erected at Elbow Lake, the board of county commissioners having approved them. The building will be two-story and basement, of pressed brick and cut stone, with a center dome, fireproof vaults, fireproof floors, etc. Cost about \$65,000.00.

NORTHWESTERN NEWS.

G. C. Nunn and D. S. Whittemore, of Detroit, Minn., have formed the Becker County Stone and Tile Co., and will engage in the manufacture of cement blocks.

The Portage Entry Stone Quarry Co. has brought a stone sawmill to its plant at Port Wing, Wis.,

and expects to be able to start up in a few days.

The Mulford Pressed Stone Co., of Minneapolis, has filed articles of incorporation with \$30,000.00, the incorporators being B. W. Mulford, Henry Mayer and Philip J. Riordan.

John H. Holm and P. J. Holm, of Minneapolis, contemplate removing to Eau Claire, Wis., their old home, and engaging in the production of a number of articles, including a hollow block machine.

The Eau Claire (Wis.) Concrete Co. has completed a temporary factory and has begun operations. In the spring a permanent building is to be erected.

Arthur V. Jones, of the cut stone contracting firm of Jones & Hartley, Minneapolis, left early in December for a brief visit to his old home in England. Mrs. Jones accompanies him.

The cement block business seems to be good in Watertown, S. D. Stover & Englesby there are running five block machines night and day, and the Watertown Cement Product Co. is credited with four machines.

Boyd & Erickson, of Bemidji, Minn., propose a stock company in order to expand their rapidly growing business in concrete blocks.

The Northwestern Lumbermen's convention which will be held in Minneapolis January 30, 31 and February 1, will bring to the city a great many handlers of building materials, lime and cement, patent plasters, roofing and tar paper, etc. Great preparations are being made for the entertainment of this convention.

C. E. Evens, of Duluth, was recently in the Twin Cities, delivering samples of his Siskiwit red sandstone from his Lake Superior quarries to the architects of the Twin Cities.

The Brayton Engineering Co., of St. Paul, is distributing a booklet of information on calculating stress for beams with tables and other information on steel construction in connection with cement construction and fireproofing.

The Brinkhaus brick yard at Chaska, Minn., was bought at the recent sale by Klein Bros., of Chaska.

C. J. Swanson, of Minneapolis, proprietor of the Northwestern Brick and Fireproofing Co., with yards at Fridley, has erected a brick church at the yards for the use of residents of that vicinity for divine worship.

Sylvanus D. Morrison, a pioneer brick dealer of Minneapolis, died December 16, in San Jose, Cal., where he has been living for the past two years, aged 72 years. The interment was in Minneapolis. For twenty years he was the head of one of the large brick plants in North Minneapolis.

General Gustaf Widell, of Mankato, Minn., has formed a company which has been incorporated to carry on the stone quarry and construction business, the change being effective January 1. The corporate title is the Widell-Finley Co., with \$50,000.00 capital. The incorporators are: Gen. Widell, I. N. Griffith and W. A. Hazard, of Mankato, and W. H. Finley, of Chicago. Mr. Finley has been assistant engineer for the Chicago & Northwestern Railway for a number of years, and in that capacity has come in close contact with Gen. Widell, who has done a large amount of their stone bridge work. A Chicago office will be maintained at 665-666 Monadnock block, in charge of Mr. Finley and Mr. Hazard.

The new Mayo Brick and Tile Co., which has established a plant six miles from Walhalla, N. D., will dam the Pembina River there to produce electrical power for operating the works. The dam will be built in the spring and will produce about 400 horse power.

The Frost Concrete Stone Co., formerly operating at Iowa Falls, Iowa, has moved its offices to Waterloo, Iowa, and will shortly move the plant also. The company manufactures a line of machinery for the manufacture of concrete blocks in two pieces. The officers of the company are: R. T. Frost, president; G. L. Sult, vice president; George J. Shoenhair, secretary and G. H. Jamison, treasurer.

President Arnold, of the Western Granite Constructing Co., of St. Cloud, Minn., states that present contracts amount to many thousand yards of granite for road building, concrete construction and sidewalk construction, and the company expects a large increase of its business in this line for 1905.

Manager Gregory of the Guarantee Electric Co., Chicago, Ill., reports a large increase in the use of electricity by the stone and cement men.

ST. LOUIS, MISSOURI.

St. Louis, January 4.—There is evidently a quickening, a revivifying of trade since the close of the World's Fair. Everyone says that, contrary to all expectations—by the way things in this world seem to mostly turn out contrary to our expectations—instead of trade in general, and the building trade in particular, being dead and flat, things are better than they have been for years past, and prospects are brighter still. All the forecasts, based upon the experience of Chicago, have been falsified. The attendance, it was figured, would be greatly above that of the Columbian Exposition, but it was greatly less; prices for everything, it was predicted, would mount skywards, but with the exception of the barbers around Union Depot, there was no appreciable difference. It is true that the labor element, emulating the Union Depot barbers, demanded, and in many cases obtained, exorbitant wages, but this principally affected the Exposition company; investors and intending builders simply did not build, and now that we are settled down to everyday work we find that a whole lot of building is to be done. There is plenty of money in the city, if we may take as evidence the stores all crowded with buyers during the holiday season. There has been more buying of Christmas and New Year gifts this season than ever before, in spite of the fact that so many people bought quantities of holiday gifts at the Fair.

An important factor in the activity of building is the bringing the price of labor back to a more reasonable level. There can be little doubt that this will be done, for wages are, nominally, still higher than they were before the exposition year.

At the recent annual meeting of the Master Builders' Association, which was held for the purpose of electing officers for the year and for the usual banquet, the principal topic of the president's address, was the necessity for, and also the justice of a reduction in wages.

The meeting and banquet were held in the rooms of the association, in the Odd Fellows Building. Hiram Lloyd was unanimously elected president for the ensuing year. All the old officers, with the exception of the secretary, were re-elected. They were as follows: C. D. Morley, first vice president; William R. Wilson, second vice president; Everest P. Maule, secretary; John Low, treasurer; George Ittner and R. W. Morrison, trustees for three years. Joseph H. Furber retains his position as assistant secretary. It would certainly be a misfortune for the association to lose that gentleman's valuable services and close attention to its interests.

After the election President Lloyd was installed by Hugh G. Gillick, a past president, the other officers were then duly installed by President Lloyd.

The banquet took place in the large hall of the association and one hundred and sixty guests sat down to an exceptionally choice feast. The invitations to the banquet had been designed by Assistant Secretary Furber and were decidedly original. The paper on which the invitation was printed was a brown wrapping paper; there was a very youthful-looking representation of a building at the top of the paper and beneath it—in manuscript, such as a first grade child could write, with spelling to match—was the invitation. The "meanyou" was equally amusing, and the names of the invited guest was written in with a pen, but in the same childish hand, which no writing sharp (I beg pardon, calligraphy expert) would be able to connect with the assistant secretary's regular fist. The after-dinner speeches were brief; as stated above, the principal point was in the address, or speech of the president, where he referred to the necessity of a readjustment of wages in the building trades.

The dismantling of the Exposition palaces has not yet commenced, for the buildings are not yet emptied, but the work is going on rapidly. One of the earliest things to do will be to remove the statues that are to be preserved. These will also be "preserved" in another sense with a preservative. Out at the Fair grounds I was informed that what will be done to some of them is to treat them with the Hunkins-Willis stone preservative.

The demand for building materials of all kinds continues fair and in many lines it is brisk. Prices are reasonable, except for Portland cement, which is too low. There can be no abiding advantage to the community when conditions force the price of any article below the cost of manufacture.

MEMPHIS AND THE SOUTHWEST.

MEMPHIS, TENN., December 27.—The building trade in Memphis has a good outlook as the new year approaches. The consumption of lime, cement and granite will be large, even during the winter months. Two sky scrapers are under erection here and a third is in contemplation.

The Wright Lime and Cement Co. is having a good run of winter business, both in the city and at towns out in the country. Mr. Wright is much interested in hydraulic brick, and in another end of his business is pushing that to success.

The Tennessee Brick Co. have an office in the Planters' Building, and are furnishing brick for many of the new suburban homes going up here.

J. A. Denie & Co., who handle lime on Front Street, have carried for years a heavy stock. They were pioneers in the supply business here.

The Miller Paving Co. on Front Street, have, in 1904, broken their record of a score of years in the Memphis trade in doing paving work for the city fathers and individuals. The pavements now being put down in Memphis are up-to-date and handsome.

Kansas.

N. H. L. McCurtie, manager of the Kansas City office of the Western States Portland Cement Co., accompanied by George W. Snyder, of Junction City, Kan., and S. E. Jackson, of Minneapolis, Kan., recently paid a visit to the Portland cement plant at Independence, Kan.

Neodesha, Kan., had a big day recently when the major investors and official managers of the Portland Cement Mills, being erected there in the outskirts of the city, had their first meeting in Neodesha. Among those present at the meeting were: Chas. F. Ritter, of Covington, Ky., president. Mr. Ritter is largely interested in the Union Portland Cement Co., of Rushsylvania, Ohio; J. A. Cruikshank, of Bellefontaine, Ohio, vice president, also vice president of the Union Portland Cement Co., of Rushsylvania, Ohio; Pon. Dwight Harrison, of Columbus, Ohio, secretary. Mr. Harrison is also secretary of the Union Portland Co., of Rushsylvania, Ohio; Frank E. Tyler, of Junction City, Kan., treasurer. Mr. Tyler is president of the Ft. Riley and Junction City Electric Railway. M. J. Gottschalk, of Ashtabula, Ohio, director, proprietor of the Ideal Hoop Co., and the Bibb Hoop Co., of Ashtabula, also director in the Union Portland Cement Co., Rushsylvania, Ohio; Henry Josse, of Piqua, Ohio. Mr. Josse is also a director of the Union Portland Cement Co., of Rushsylvania, Ohio; J. L. Ballinger of Plain City, Ohio, director. Mr. Ballinger is the general contractor for building the American Portland Cement Mills, is proprietor of the J. L. Ballinger Milling Co., director of the Farmers' National Bank, secretary and treasurer of the Molton Wireless Umbrella Co., of Plain City, Ohio, and president of the Union Portland Cement Co., of Rushsylvania, Ohio. Robert Nesch, of Kansas City, director. Mr. Nesch is president of the Ottsburg Vitritified Paving and Building Brick Co., and others.

The McPherson Cement Stone Co. has been organized at McPherson, Kan., to manufacture Miracle patent web block. The company has bought a complete plant which is on the way. They propose to furnish the stone or to contract to put up buildings complete.

At Anthony, Kan., Harry Patton has bought the George Kilburn interest in the Anthony Cement Stone Co. and begun active work with the firm this month. F. K. Reasoner will continue as manager and the style of the firm will not be changed.

The Standard Vitritified Brick Co., at Coffeyville, Kan., has begun tearing down the old Starck brick plant and will begin the erection of its buildings and installing new machinery at once. The company will have a capital of \$70,000.00.

The Gas City Cement Sack Factory has started up at Iola, Kan. Its first load of sacks were delivered per contract to the Iola Portland Cement Co. The load consisted of 7,500 cement sacks ready for use.

The Norton Concrete Block Manufacturing Co. will be started in a few days at Norton, Kan. The new machine to be established will be hydraulic pressure and will make all kinds of building blocks as well as sidewalk material. Cal. R. Jones, of the company, is now in Kansas City selecting facings and some new attachments.

John Deman has bought a half interest in the cement stone plant north of Kingsley, Kan., and the firm will be known in the future as Sprigg & Deman.

Missouri.

A. H. Greene, at Oregon, Mo., is making preparations to burn 250,000 brick next year.

At Poplar Bluff, Mo., C. W. Tetwiler has purchased a machine for the manufacturing of hollow concrete building blocks and will start a factory within the next ten days.

It is probable that Joseph Pope will start a cement block manufactory at Sedalia, Mo., in the near future. Mr. Pope now does considerable manufacturing at Jefferson City.

Indian Territory.

The South McAlister Elastic Pulp Plaster Co. is now ready for business at South McAlister, I. T. Several large shipments of gypsum have been received from Oklahoma for the factory. The plant is one of the most complete plaster plants in the country. Thos. Kelley, the secretary and general manager of the company, has been working very hard to get the plant ready on time and it has a bright outlook in the trade. The company is capitalized at \$50,000.00. The officers are: Ben Durfee, president; W. E. Hailley, vice president; Thos. Kelley, secretary and manager; John O'Neill, manager of the sales department.

The Western Hollow Brick Co., of Bartlesville, I. T., with a capital of \$100,000.00, has filed articles of incorporation. The incorporators of the new company are: J. J. Cuir, F. Bucher and Chas. E. Hare.

At Shawnee, O. T., the following well known cement men have formed a new company to be known as the Oklahoma Concrete Sidewalk Co. H. W. Dunham, senior member of the new company, has been in the cement business for over fifteen years. James Campbell and Henry Price, the other members of the firm are also experienced men. They expect to do a general contracting business in the concrete line.

P. D. Parks, manager of the Ada Asphalt mines, has been actively at work for the last few weeks getting his machinery in readiness to mine asphalt a few miles west of Ardmore. The concern is backed by capitalists from Memphis, Mississippi and Louisiana.

A Muskogee, I. T., informant, says that the Southern Marble Co., has just received from the department of the interior the leases on the marble lands at Marble City in the eastern part of the Cherokee nation. It has taken two years to have these leases approved. There are 300 acres of the finest marble lands in the Indian Territory. There is now a big plant building in Marble City which will cost \$100,000.00 and will give employment to hundreds of men. The town and the quarries are separated only by the Sallisaw Creek. Diamond drill prospecting shows that this marble, covering hundreds of acres, is 142 feet thick and without a seam. It was this marble that won the medal for Southern production at the World's Fair. For fifteen years marble men have had their eye on this quarry, but the Indian laws were such that not a cubic foot of it could be quarried and shipped out of the territory. Ten years ago a company was formed at Ft. Smith to develop the quarries. It spent \$10,000.00 on a plant, having a lease agreement with the Cherokee nation. After the money had been spent the department of the interior refused to approve the lease. The company was headed by Judge Clayton, now a Federal Judge in the territory.

Arkansas.

The Arkansas Concrete Stone Co., of Benton, Ark., has been incorporated with a capital stock of \$25,000.00, of which \$5,000.00 has been subscribed. J. B. Sudduth is president; O. L. Cate, vice president; B. F. Henry, secretary and treasurer.

There is a mountain of black marble near Marshal, Ark. Representatives of Chicago capital have lately inspected this marble with a view to developing it and it will hardly be long before Arkansas black marble will be formally presented to the world.

M. A. Dunavim, of St. Louis, who formerly lived at Jonesboro, Ark., has recently been at the latter town prospecting with reference to getting a company up for the manufacture of sand cement brick.

Articles of incorporation have been filed at Little Rock for the Star Lumber and Brick Co., of Vandalia, Ark. The company propose to manufacture brick in connection with their lumber business. The company is capitalized at \$125,000.00, of which sum \$25,000.00 has been subscribed. The officers are: James N. Hall, president; A. N. Schwing, vice president and treasurer; T. E. Hare, secretary.

Texas.

The Texas Export Co., of Houston, Texas, has elected the following permanent officers: President, Col. S. G. Grimshaw; vice president, Samuel P. Kelley, secretary and treasurer, D. S. Valkenburgh; trustees, Dr. C. H. Lass, J. J. Pastoriza, James Lawlor, H. A. Shaffer and H. C. Turner. It is the intention of the company to erect a crushing and other necessary plants for the preparing of different clays for export either at Burton or Flatonia. The company now owns leases on nearly 1,500 acres of land which have extensive deposits of valuable clays, and are now negotiating to control additional lands which will total about 2,000 acres to be controlled, by them. The importation of clay into this country has gradually increased from 24,000 tons in 1885 to nearly 200,000 tons in 1903.

NASHVILLE AND THE SOUTHEAST.

NASHVILLE, TENN., December 27.—It is probable that the greatest season of fertilizer shipments ever known in Nashville since the city became an important center for the distribution of this product will begin some time in January. This is the regular time for the spring shipments, and the different plants here are preparing for the largest shipment probably in their entire history. Since the close of the fall season a great deal of rock has come in here; this has been manufactured and will be ready for shipment in January and thereafter. The railroads here will have plenty of equipment when the time comes, to take care of this character of shipments, as the factories, as far as possible, let the railroads know in advance what their need for cars will be, and although these are very large at times every effort is made to supply the equipment. It is an ordinary sight for solid train loads of this fertilizer in manufactured form to leave Nashville for the various places that look to Nashville for their supply. At the beginning of the season about fifteen cars are shipped daily and this soon grows to 125 daily.

The firm of Foster & Creighton, of this city, has been engaged since June 1, 1903, in getting out stone for the ballast of the Nashville Railway and Light Co.'s tracks. The contract calls for 125,000 cubic yards of broken stone. The quarry is located a short distance from the Charlotte turnpike on a spur running off from the West Nashville car line.

The Southern Tile and Brick Co. has filed an amendment to its charter increasing its capital stock from \$20,000.00 to \$30,000.00.

A fertilizer plant will be erected at Jackson, Tenn., by E. L. Gregory and J. R. Ruhm, of Mt. Pleasant, Tenn., at an early date. They will expend about \$10,000.00 on the plant at the start and will gradually increase it until it becomes a \$75,000.00 factory. The cloverline formula will be used in making the fertilizer.

The representative of the Ferro-Concrete firm who was in Knoxville recently, and made a proposition of the mayor of Knoxville and the railroads with regard to the Clinch Avenue viaduct, and who later went to Louisville, Ky., to lay his plans before the chief engineer's office of the Louisville and Nashville, has returned to Detroit, Mich. He went away from Louisville with instructions from the Louisville and Nashville people to give them more complete data. This Mr. Cohen, the agent, has gone to get. The fact that the Louisville and Nashville railroad officials have taken the matter under investigation and have asked for fuller data is considered as hopeful of the acceptance of the plan on the part of that road, which is to be the largest contributor to its construction.

The Knoxville Pottery Co., of Knoxville, Tenn., has been incorporated with a capital stock of \$20,000.00 by W. B. Caldwell, R. H. Cate, Wm. H. Weaver, C. A. McKerson and J. E. Cassidy.

The marble pagoda which formed a part of Knoxville's exhibit at the St. Louis Fair will be loaned to the government of the United States for an exhibit in the great National museum of Minerals, to be established in Washington, provided the government, which made the request, will pay the transportation charges and return the pagoda to Knoxville after three years. The solicitation of the pagoda by the Sam Davis Monument Committee, Secretary Enloe and Gov. Frazier, as a part of a permanent exhibit to be maintained at Nashville, was voted down.

The United States patent office has awarded a patent to Robert McCarrel, of Jacksonville, Fla., for a composition like oolitic limestone.

LOUISVILLE, KY.

LOUISVILLE, Ky., December 30.—The close of the year 1904 has been marked by many notable improvements in our city and the volume of business has far surpassed the sanguine expectations of the most hopeful. The fears entertained by so many of our business men that the present year would fall far short of previous years owing to the National election were wholly unfounded.

The coming year will be marked by some notable improvements in the city. One among these will be the erection of a nine-story office building at Ninth and Broadway by the L. and N. Railroad Co. Work on this will begin early in the spring.

Early in January bids will be advertised for the construction of the new armory at Sixth and Walnut Streets, which will cost \$325,000.00.

The progress here has been notable from the fact that it has been entirely devoid of anything in the nature of a boom. We are enjoying a substantial and satisfactory growth, particularly in the building line, and every one is encouraged in the outlook for the coming year. The architects have plans under way for numerous structures which means that the builders and those furnishing the materials will have no reason to complain. Artificial stone and concrete work will be very materially increased and taken as a whole the outlook for the general prosperity of this locality has never been brighter.

An interview with Mr. E. R. Burghard, president of the Peter-Burghard Stone Co., demonstrated most forcibly the large volume of business this concern has done during the present year. He said: "Business has been very good this year, both in monuments and stone. Among the large contracts completed during the present year are: The postoffice and custom house at Atlantic City, N. J.; The Orient Insurance Co.'s building, Hartford, Conn.; M. E. Church, South, at Asheville, N. C.; All Saints Church, at Braintree, Mass.; City Hospital at Allentown, Pa.; Mercersburg Academy at Mercersburg, Pa.; First English Lutheran Church, at Louisville, Ky. We have several good contracts on hand for next season that will keep us busy during the winter months, namely: The U. S. Bureau of Printing and Engraving, at Washington, D. C.; State Capitol at Richmond, Va., and the German Zion Reform Church, in this city. We have been unusually busy in our monument and granite cutting department, and have sufficient contracts ahead to keep our full force going through the winter."

The Blatz & Krebs Stone Works reported that they had had a very satisfactory year, during which some large contracts were completed, and are hopeful from present indications that the coming year would be even more prosperous.

Mr. Peter, of the Peter-Melcher Steam Stone Works, said that during the past year their business had been largely increased and that they were entirely satisfied with the number of contracts secured. While he had nothing of special interest to say at the present time he is confident that the year 1905 will be exceptionally good, particularly for the stone and monument business.

John Diebold & Sons, large handlers of stone, having completed their immense steel shop with its ten-ton electric crane, are still pretty fairly busy. The present year has been marked by considerable improvement in their business. They expressed themselves as being most hopeful for the new year and were confident that their business would be largely increased.

The Falls City Artificial Stone Co. has enjoyed an unusually prosperous year and is still busy completing some of its large orders for concrete work taken several months ago. Judging from the past year's business this company expects to do considerably more work in the concrete line during the coming year. Several concrete block houses have been erected during the present year and they look for additional orders in the building block line next year.

The National Concrete Construction Co. has enjoyed an exceptionally prosperous year. They have received and completed numerous large orders for concrete work and are confident that the new year will be a most satisfactory one for their particular line. At the present time they are erecting a two-story concrete front at their office on Main Street, a view of which we hope to publish when the same has been completed.

The Southern Roofing and Paving Co. were just about completing their orders taken late in the

season for concrete work and roofing. They have enjoyed a most prosperous year and considering the fact that they added the concrete branch to their business only last February, have had a remarkable year in this particular line of work. In fact, they have done at least a third more business than they had anticipated, and look for, not only a continuance of prosperity during the coming year, but hope to very materially increase their business.

The National Roofing and Supply Co. have had a very successful year. Mr. J. B. Ohlischlager said that the business done during 1904 had been very gratifying. They were still working at odd times when the weather permitted and expected to continue so all through the winter. He believed, judging from the numerous plans under way, that the next year would very materially increase their business, as the number of buildings already contemplated were largely in excess of those erected during the present year.

Charles H. Connor & Co., manufacturers and dealers in all kinds of roofing material, reported that their business had been very materially increased during the present year. Mr. Connor said that he was confident that the coming year would prove most gratifying from a business point of view. The prices were tending upward at the present time, which he did not take, however, as an evil omen as they had been very much too low during the past few months.

The Ohio River Sand Co. were pleased to report that their business had been increased at least 25 per cent. during the past year. They have made some notable improvements and were preparing for the year 1905 which they believed would be a prosperous one. Notwithstanding the fact that several strikes in the building lines had affected their business, they were much gratified with the amount of orders they had received.

Mr. Scott Newman, a large dealer in Ohio River sand and gravel, said that his business during the past twelve months had been most gratifying, and he saw no reason why the new year would not be even more prosperous than the year just drawing to a close.

W. F. Nugent & Bros. have had the banner year since their entering the sand and gravel business. Their orders had increased to such an extent it was found necessary to build a tow boat, and in the early spring they intend to erect at the foot of Seventh Street, a modern crane which has been ordered from the Brown Hoisting Machinery Co., of Cleveland, Ohio. This will be of the latest pattern and will greatly facilitate them in filling their orders. They look for the coming year to far surpass the present one in the volume of business done.

Kentucky Wall Plaster Co.—Mr. John Campbell informed us that they had just purchased the Hoosier Wall Plaster Co., of Jeffersonville, Ind., and were busy installing new machinery and equipping the plant in order to take care of their additional orders. They expect to have this plant in full working order about the first of January and while the past year has been very satisfactory they hope for an increase during the coming twelve months.

The Louisville Fire Brick Works, at Highland Park, Ky., had increased their business at least 25 per cent. in 1904, notwithstanding the fact that they had suffered a material loss by fire during the early part of the year. At the present time they were behind with their orders and Mr. Grahn said that he was quite confident that the new year would be one of the most prosperous in the history of the country, and he looked for a very material increase in his business. He has just installed an electric light plant with sufficient power to light his plant and office, thereby turning night into day, so that he is prepared to work 24 hours if need be.

The Western Cement Co.: Secretary Courtenay said that they had enjoyed a very good year, considering the low price of cement. Business was very quiet now, it being the dull season in the cement line, but so far as he could see the prospects for the year 1905 were encouraging.

J. B. Speed & Co. said they had had a very satisfactory year in the lime business, but that the cement trade had not been so good. They had run full time up to Christmas in their lime department and were satisfied with this branch of their business. They felt that the coming year would be a prosperous one, and that business would be, in some respects, better than the past had been.

The Utica Lime Co. had not had as brisk a year in 1904 as in the previous year, but had done a nice business.

Clay.

Brick Manufacturers' Convention.

The National Brick Manufacturers' Association will hold its annual convention in Birmingham, Ala., at the Hillman House, January 30 to February 11, inclusive.

Ceramic Society Meeting.

The American Ceramic Society will meet at the Hillman House, Birmingham, Ala., January 30, 31 and February 1.

Finest Fire Brick Clay in the World.

Carter County, Kentucky, possesses a valuable, and seemingly inexhaustible, mine of fire clay. While the existence of this vast bed of clay was known to a limited number of parties, some of whom took advantage of the fact and utilized it in the manufacture of fire brick as far back as the early '90s, its real value has only been appreciated during the past several years.

It is now generally conceded by all the leading fire brick manufacturers, that the Carter County clay is superior to any in the world. Where this clay excels is in the fact that the proportion of plastic clay, as compared with flint clay, is very minute, and consequently is exceptionally adapted to the manufacture of the finest fire brick. It is a recorded fact that some of the first brick ever manufactured from this clay, which have now been in continuous use for a number of years, are still doing satisfactory work. In some instances these brick have been subjected to the severest test possible.

One of the pioneer organizations located in the heart of this fire clay tract is that of the Olive Hill Fire Brick Co., which has been in existence since 1895, having at that time erected a small plant for the manufacture of fire brick. Since that time they have gradually added to their plant until now they have expended over \$600,000.00 on it. The vein of clay now being mined by this company is fully twenty-five feet in thickness and is all flint clay. Their business has steadily grown until at the present time their output is many thousands a day.

A Wilmington, Del., concern known as the Brandywine Brick Co., has been chartered for the purpose of manufacturing and selling brick, and has a capital stock of \$250,000.00.

The Rockingham Brick Co., Boston, Mass., has been incorporated with a capital stock of \$50,000, with Winthrop M. Merrill, president, and Edward O. Clidden, treasurer.

The Mexico Brick and Fire Clay Co., of Mexico, Mo., has been incorporated to manufacture all kinds of brick and tiling with a capital stock of \$25,000.00, by: W. W. Harper, J. A. Glover, W. K. Potts, A. G. Turner, W. W. Fry and others.

J. W. McVicar, of Elsinor, Cal., has recently sold his clay beds to the Clay Manufacturing Co., of that city, for the sum of \$15,000.00, for the purpose of making sewer pipe, fire brick and terra cotta. The railroad will be extended to the beds from Alberhill, and will greatly facilitate the shipment of the clay.

The Montello Brick Works, Reading, Pa., has been awarded a contract to furnish all the red brick required for the building of the John Wanamaker store building, in Philadelphia. It is said the structure will be eleven stories high from the ground floor, with a three-story basement and covers an entire block. The contract calls for 16,000,000 brick.

The Van Buren Peat Brick & Tile Co., Paw Paw, Mich., has filed articles of incorporation for the purpose of manufacturing building brick and drain tile. Mr. A. J. Lamberson, a capitalist, is the heaviest stockholder, and with him are associated the following Gobleville parties. They also constitute the board of directors: S. Redding, chairman; A. W. Myers, vice chairman; R. F. Vickers, treasurer; F. H. Borradile, secretary. The company is capitalized at \$60,000.00.

Granite.

LANE MANUFACTURING CO.

The Great Plant Where Stone Men Get Machinery.

MONTPELIER, Vt., January 2.—One of the most valuable adjuncts to the Barre granite industry has been since the first monument stock was taken from Mill Stone hill, the remarkable improvements and inventions in machinery. The machine plant that has probably built more machinery for the granite industry than any other is the Lane Manufacturing Co., of Montpelier, Vt., their specialty being traveling cranes and derricks.

In Barre and Montpelier alone there are 26 traveling cranes of their manufacture, and amongst their many boom derricks is the famous one at the Boutwell quarry, the largest boom derrick in the world.

The Lane Manufacturing Co. is known to the entire stone trade, but many of them who have never visited their immense plant can have any very definite idea of what the term "Lane Mfg. Co." really means.

To help some of those people to get acquainted we propose to devote a little space this month to a brief history and description of the business.

Had a Small Beginning.

In 1861 Dennis Lane began in a small way the manufacture of machinery in Montpelier.

In 1865 Gen. P. P. Pitkin became a partner in the industry, and a little later James W. Brock was admitted, the firm becoming Lane, Pitkin & Brock. The industry soon reached considerable proportions and in 1873 it was incorporated as the Lane Manufacturing Co., with a capital stock of \$120,000.

The company conduct a general business as machinists and founders, besides manufacturing many specialties for the lumber and wood working industries and also for the stone trade.

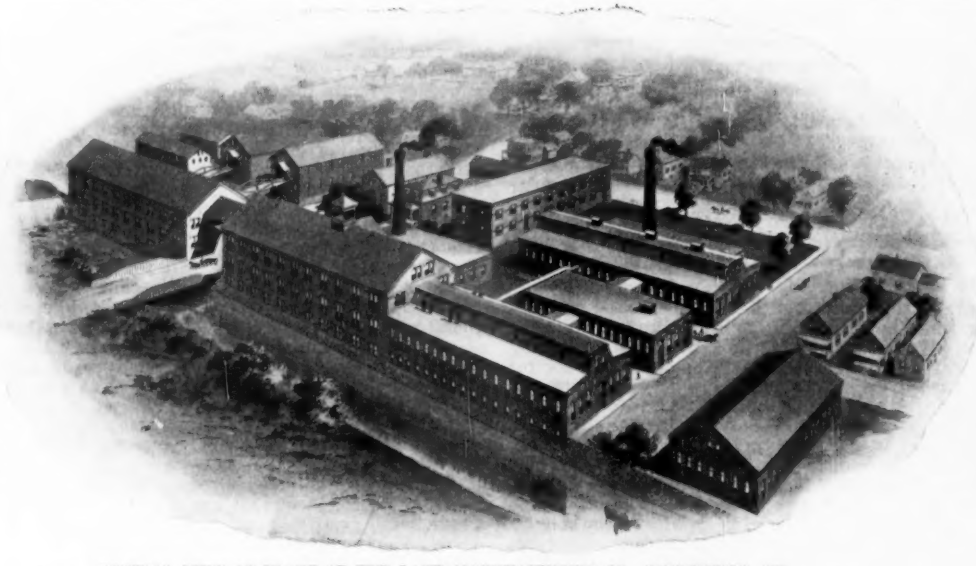
Carrol P. Pitkin, son of Gen. Pitkin, who was one of the original partners, is the very efficient general manager, and each department under him not only in the office force, but in shops, is in charge of a most competent superintendent.

Extent of the Establishment.

The works comprise ten buildings with 100,000 square feet of floor space, not including the storehouses, and give employment to about 130 men, who, because of the high grade machinery and improved facilities for handling the work are able to do the labor usually requiring 160. The pay roll is over \$1,500.00 weekly.

All the principal buildings are of brick, lighted throughout by electricity and heated by the Sturtevant system.

Power is furnished by water wheels, water motors, engines and boilers, giving a double system so that there is never any danger of a suspension of work during the dry season. The different depart-



GENERAL VIEW OF PLANT OF THE LANE MANUFACTURING CO., MONTPELIER, VT.

ments of the works have been so admirably arranged with a view to convenience that there is no "false motion" and no unnecessary delays, nor time lost in construction, setting up, and shipping.

The manufacture of the iron work commences at one end, and the wood work at the other, gradually progresses toward the center, where the machinery is completed ready for shipment in the assembly room, where the iron and wood are joined together. The shops are all fitted with the best modern machinery that money could buy and brains invent, including all the best and latest patterns in lathes, planers, milling machines, radial drills, turret-chucking machines, both vertical and horizontal, turret screw machines and power hammers.

The office is a neat building by itself. The spacious outer room is used as a general business office; back of this are the bookkeepers' quarters, rooms for the typewriters, stenographers and those in charge of the correspondence.

Over the main office is the draughting room where machines are designed, full working plans for the erection of mills and placing of machinery made. The blue prints are also made in this room and are furnished to all purchasers of machines, to assist them in getting up and starting them with a thorough knowledge of the parts.

Immediately back of the main office is a pleasant apartment with a bay window. This is Manager Pitkin's private office.

On leaving the office and going west is the pattern house 84x36 two stories high and filled with costly patterns of every description.

The next building is the foundry room 130x60 feet with storage room for sand, coke and supplies in the rear. It is fitted with two cupola furnaces, an elevator, cranes and a brass department. Among the up-to-date appliances there are the moulding machines, three in number, and known as the Delano machine. Each machine can be adjusted in an instant so as to cast any one of 3,600 different sizes of pulleys and any one of these 3,600 can be made either solid, clamp or split. They are the only appliances of the kind in this part of the country.

Another new thing is the pneumatic sand sifter, by which ten times as much can be done as in the old way by hand.

At the further end of the building is a test room where, in about one second's time, the power of resistance of all the cast iron they use can be accurately computed. They use all new metals, making their own brass work and babbit. The capacity of the two cupolas is thirteen tons.

Numerous windows in the walls and inclined roof light the interiors as few foundries are lighted.

The chipping and milling room is next in line. This is 85x32 feet. Here the castings are cleaned and ground on emery wheels. The separator and rattling mills with which the room is furnished clean the castings and separate the iron shot from the slag, saving hundreds of pounds of iron daily. The pneumatic chipping machines are one of the interesting features of this room.

In the first machine shop 85x60 feet, are the 6-foot radial drill, a vertical turret chucking, one horizontal chucking, one plain chucking machine, shafting lathes, cutting off machines, cutting off and centering iron up to five inches in diameter, and a full complement of lathes and other machines. The compressed air plant here operates the radial drills. In to the machines just mentioned there have been added during the past year three new American engine lathes, two new turret lathes, two Brown & Sharpe milling machines and one Brown & Sharpe grinding machine.

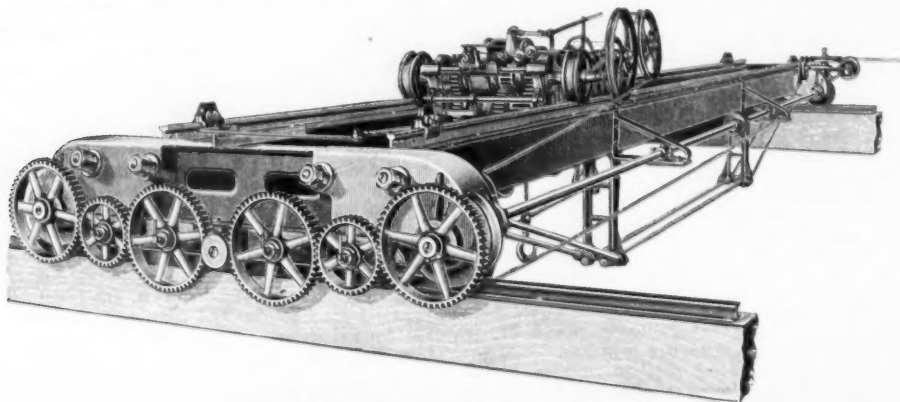
In the smithing room is a little machine with a giant's power stored in its compact frame; it is a power hammer, capable of striking 250 blows of 1,500 pounds each in a minute, and with it the very lightest and the very hardest blow can be struck. The power shears here are of considerable importance.

Principal Machine Shop.

The main machine shop, 130x50 feet, two stories high, making the combined length of the machine shop about 345 ft. Here is the planing department with eight modern planers of different capacity, new circular saw cutting off machines for cutting metal up to 6 inches in diameter, the 2-6 radial drills, a big double headed metal planer 6x12 ft., screw and bolt machines almost without number.

The other buildings are used for the wood working department as already explained. The traveling cranes are put together in the assembly room. One important point in the building of their cranes and one which makes the machinery more durable than they would otherwise be, is that the iron ends of the bridge, where the gearing is attached, are all machined, as are the holes that receive the journals, thus making a perfect fit and allowing the machinery to travel smoothly.

The fire protection of the entire plant is the most perfect that could be conceived. Besides the machinery used in the stone trade, the company builds all kinds of wood working machinery. The Lane circular saw mills are shipped to all parts of the world. In the past year mills have been shipped to South America, Cuba, British America, Uruguay, Paraguay, Chile, England, Sweden, Alaska, the Great Northwest and the Pacific Coast.



THE CELEBRATED ANDERSON TRAVELING CRANE.

High Grade Catalogues.

There are few concerns in existence that send out more attractive and business like catalogues than this company. The one of most interest to the stone trade is the one relating to Anderson's patent power traveling cranes, manufactured by Lane Manufacturing Co.

This gives all the information and all the illustrations that any one needs. We shall not attempt to give any digest of this for any person who is interested may obtain one by writing to the company for it.

ST. CLOUD GRANITE.

Something About this Stone and Those Who Operate the Quarries.

ST. CLOUD, MINN., November 15.—The history of present developments at this point is very similar to that of many other granite districts. Practical men, mainly thrifty stone cutters with a little money laid by, have invested in the business in a very small way and by hard work and careful management, have gradually grown to firms of considerable importance with well equipped plants and quarries.

The red granite in this district was first opened up for building purposes by Breen & Young, of St. Paul, about thirty-two years ago and it was used in the St. Paul postoffice. After this the granite business lagged in this section and quite a number of failures were made in the attempts at further developments. This was due mainly to the fact that the country at this time in the Northwest was very new and in consequence the markets were very much limited. There was no marked development in the industry, especially along the monumental line, until about ten years ago when it was found that this stone was an excellent monumental stone, and one which can be produced and worked with considerable economy. The beginning of prosperity for the production of building stone from this section dates back a little earlier than that of the production of any quantity of monumental stock. It has been largely used in building many of the big bridges over the Missouri River.

Within a radius of ten miles of St. Cloud there are probably twenty-five or thirty outcroppings, no two of which are exactly alike, yet there is great uniformity in color and texture at any one point; that is, all of the quarries which have been opened are sufficiently uniform in color that there is little difficulty in duplicating a job.

A gray granite is also quarried here, and when polished is a very handsome stone, but there are so many black spots occurring in it that almost no firm will agree to furnish great quantities guaranteed to contain no black spots, yet occasionally pretty large pieces are produced which are free from this defect, which is practically the only one



QUARRY OF SIMMONS & CAMPBELL, ST. CLOUD, MINN.

which it has. This granite is used for the most part for paving and curbing, and the Northwestern Granite Co., four and one half miles southwest of town, take out a good deal of this gray granite.

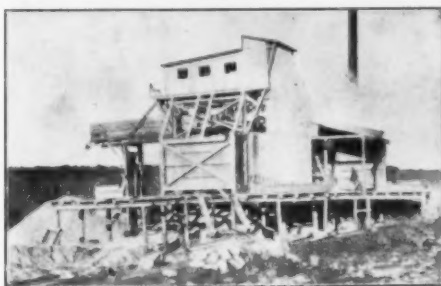
Holes Bros. are also opening up a property on gray granite.

Hennessy Bros., of St. Paul, are operating a quarry in this section.

Prices on rough stock f. o. b. cars range from 90c to \$1.10. Squared and polished work ranges from \$1.60 to \$2.25, depending on the size and the amount of polishing.

Holes Bros., which consists of W. J. & G. O. Holes is not only one of the oldest, but also one of the larger producers and manufacturers of monu-

mental stone in this section, W. J. Holes being the oldest man in the granite business still at it. Their quarry has been open nineteen years and is probably the best quarry in the section. When out at the quarry with Mr. W. J. we saw a soap stone seam which they had uncovered recently between five and ten feet wide, but with the same quality of granite on the other side. Mr. Holes laughingly said, "When we discovered this it immediately took \$1,500.00 off of our valuation of the quarry." In other words he meant that it would cost him that much to get it out of the way. However, the stone is good as they get down, so that they shall not necessarily need travel in this direction except



THE WESTERN GRANITE CONTRACTING CO.'S PLANT, ST. CLOUD, MINN.

for economy in production. This quarry is exceptionally well equipped, having the largest derrick in the section which was installed by the St. Cloud Iron Works. The mast is of Washington fir, twenty-eight inches in diameter at the top, 36 inches at the bottom and is eighty-five feet high and carries a boom eighty-one feet long. There are 42,580 feet of steel wire cable, including 2,800 feet of guy rope to hold it in position and has a capacity of seventy-five tons. The casting and steel entering into the equipment weighs close to 20,000 pounds. It is handled by a 30 h. p. twin drum hoist with a steam power turning device. This shows that this firm is one of the most enterprising in the section. The installation of this large derrick shows that there is no difficulty in producing stone of almost any dimension desired, otherwise they would not need such heavy equipments.

Holes Bros. have had a good sized mill in operation for the last twelve years, and six years ago came to their present location and have been making improvements ever since. Their especial brand is known as "red rock granite" and they claim that it is the finest in the world and say that they have the stone to prove it.

Simmons & Campbell another large, progressive and up-to-date concern have been in business here for about six years, first operating the old Emery quarry four miles west of town, which they ran for four years, after which they bought the old Breen quarries, about one-half mile from Holes Bros.' quarry. The same year they built a large new mill, which is the finest in St. Cloud and is 40 by 160, with traveler tracks through the plant and extending fifty feet beyond. They have two over-head hand travelers, four polishing machines, one column lathe, two surfacing machines and pneumatic tools. In fact, practically everything that an up-to-date granite mill needs. This is one of the most energetic and progressive firms in the section. Their quarries are well opened up because they took them up where Breen left off. They have also made a new opening this year which looks very good to us.

Right across the railroad from the two firms mentioned is the St. Cloud Granite Works, which is nearly as large as either of the two just mentioned and almost as well equipped. This firm is doing good business, and has materially increased the size of their sheds and equipment within the last year. This firm consists of Alfred Johnson, who is manager, F. R. Eckstrom, Emil Peterson, L. C. Brown, C. P. Ahlsten, E. A. Hennipst all of whom are practical workmen. The St. Cloud Granite Co. operate a quarry between the mill site and the quarry of Holes Bros.

Right across the road from Holes Bros' mill is a smaller plant which is known as the Plymouth Rock Granite Co. of which Martin Muchler is president and secretary; Ashlin Anderson vice president; J. F. Davis treasurer. This firm is also made up mainly of practical granite workers and will no doubt be one of the foremost in the future.

On the Sauk Rapids side which is just across the river, the Western Granite Construction Co., of which Walter Arnold is president and C. C. Dragoo, secretary and O. H. Havill, treasurer, is operating mainly for the production of paving block and crushed stone, but at the same time is getting out monumental and building block. This company probably represents the largest operations in the section, although they are not at the present running a mill but prior to a fire which partially destroyed their mill near the depot last summer they were mill operators, and it is probable that in the near future they will build another mill at the quarry. This property is perhaps better known as the Arnold property. They have several openings at the quarry property, one which is to be used mainly for crushed rock and paving block. The other two will be worked almost entirely for monumental and building material. Manager Walter Arnold said they had had all they could do this season and that they handled a good many of the paving block which are produced as a by-product at nearly all of the monumental quarries. Mr. Arnold also said that his company contemplated quite a good deal in the way of improvements during the next six months or a year.

Down in town we had a very pleasant chat with the manager of the Misho Granite Manufacturing Co., of Sauk Rapids, who said in the course of conversation, "We have granite of excellent quality here and it works well when you know how to handle it, but this would be of no value if it was not for the fact that we have plenty of potatoes and good beef as well."

Right close to the Sauk Rapids depot you will find a very neat little monument shop operated by Charles Milne, a man who has had wide experience in the working of all kinds of granite. Mr. Milne has only been operating here for two years, having spent the time previous to that in traveling over the country and working in granites from every section of the country, so that he is in a position to give the highest class of service to those who desire monuments.

We regret that we are not able to go out to the quarries of Robert Graham, but he is reported to have turned out a very large quantity of paving block during this season.

Talking about the cost of production of paving block here we would infer that the cost is close to 6 cents.

Johnson & Borwick and G. J. Hilder are also running quarries in this section, and at Rockville a short distance away the Rockville Granite Co. is operating.

Jones Bros. also have a monument plant on the Sauk Rapids side and John Silesky & Co., one on Fifteenth Avenue, St. Cloud.

In the Market for Crushers.

SENECA FALLS, N. Y., December 20.—The W. & J. Littlejohn Granite Co., established in 1860, has just been incorporated under the laws of the State of New York with a capital stock of \$40,000.00 for the purpose of the manufacture and sale of granite



THE WESTERN GRANITE CONTRACTING CO.'S QUARRY, ST. CLOUD, MINN.

and artificial stone. The company has a large and complete granite and artificial stone plant at Seneca Falls, New York, where their principal offices are located. This company has been manufacturing concrete blocks for some months past and has just completed a business block in Seneca Falls. At the present time they are working on a large receiving vault for the village of Naples, N. Y., and they also have a number of small contracts under way. The manufacturers of crushers of small capacity might find it to their advantage to address this concern who are in the market for small power crushers that will produce material from 1/2 to 1 inch. This concern will also purchase a small power mixer.

BARRE, VERMONT.

BARRE, VT., December 31.—One of the first things I have to say about Barre, this month, is directed at the retail dealers, who have been, or are likely to be, hoodwinked by irresponsible parties or by any one else into believing these wild stories about getting work cut cheaper through speculators than they can by dealing directly with the manufacturer. If it is culls you want with a disgracefully low quality job all around you can't find it among the responsible manufacturers of Barre granite, but if you want a job that will maintain your own reputation as a reliable dealer and that will not reflect discredit upon the Barre granite industry don't think for a minute that you can possibly do any better than by communicating with the manufacturers.

If you want a directory to tell you who they are, just turn to the pages of Rock Products and you will find plenty of them, and there are others besides. But don't think that any irresponsible speculator can make a profit and also give you better service by securing your patronage and then turning the work over to the manufacturers.

Then there is another point of view for you retailers, not only as a point of honor, but as a matter of business. Do you realize that the Barre granite manufacturers practically to a man depend entirely upon you retailers for their work? That is to say they give you absolute protection, and have never lifted a finger in any effort to deal directly with the people and thus cut you off from any part of your territory.

Don't you think you owe it to them in return that rather than turn any per cent. profit over to everybody who comes along, you should give it to the manufacturer?

Don't you think you can get just as good prices and a great deal better work in this way?

Then again supposing this enemy to the Barre granite industry should grow to such proportions that the manufacturers should find it advisable to do something for their own protection; suppose the Barre Granite Manufacturers' Association should consider that the time had come for opening retail offices of its own in all the leading cities of the United States, wherever it finds itself unprotected.

There is no need of such a move so long as the retail dealers co-operate with the manufacturer, and as to those who don't, well, they will soon be known, if they buy their work through parties who advertise to buy it for them from the manufacturer cheaper than they can do it. This does not refer to the responsible wholesalers. Many of these are a good thing in the trade, but it does refer to people who are trying to make the retailer believe the manufacturer is robbing him. It is a well known fact that the manufacturers have made very little money in recent years.

A Great Holiday Rush.

The trade situation in Barre is exceptionally good, so good even that many of the plants have



SEWARD W. JONES, PRESIDENT NATIONAL GRANITE MANUFACTURERS ASSOCIATION, OF JONES BROS. CO.

found it impossible to close down during the holiday season owing to the rush of work. It has always been the custom to close up shop during the holiday week. Some of them did this year, but few of them, so far as I have been able to learn did so on account of scarcity of work.

Business has held fairly good for about a month back, and in many cases spring orders are coming in better than they have ever done before at this time in the year.

Verily, the Barre men are making plans for a busy spring. Generally speaking, there is nothing worthy of special mention in any of the cutting plants this month, as most of the jobs under the hammer consist of random work, or those of plain design. There have been, however, many orders placed within the past few weeks for some very artistic and elaborate work, and one or two firms are already at work on some of these orders. There seems to be a growing tendency to call for more carving and Barre is certainly learning how to meet the demand and monopolize the output in this branch of the granite trade.

There is not much profit in the average carving job, but it certainly looks nice.

Sketch of Jones Bros.'s Mammoth Interests.

No cutting plant in Barre or in the world for that matter, is more widely known than that of the Jones Bros. Co. This was incorporated in June, 1903, with a capital of \$250,000.00.

The original firm of Jones Bros. began business in 1882 with a wholesale office in Boston. Marshall W. Jones and Seward W. Jones, two young men who came from Ebensburg, Pa. Two years later their two younger brothers, Dayton E. and Hugh J. M., became members of the firm and the business rapidly grew.

They dealt then largely in Scotch granite and even at the present time they retain a buyer in Aberdeen, Scotland. When Barre granite first became known the brothers became interested and with the shrewd foresight which has always marked their career, they came to Barre in 1886, and after looking the situation over, purchased eight acres of quarry land in what has since become the famous dark stock district.

They began at once to take out rough stock with the primitive machinery then known to the trade. They had no idea at that time that the excavations they would make would ever approach the bounds of the land owned by their neighbors, but they reached these lateral lines some time ago, and will soon be extending their operations in this quarry in the direction of Port Arthur.

The quarry to-day is equipped in modern ways, and they have just struck the finest vein of boulder that the quarry has ever produced. The property lies on the slope of the hill so that the side face of the ledge always presents itself, making the cost of quarrying cheap.

One of the principal advantages in the surroundings is that the quarry was opened by about the best quarrymen that was ever in the business, and the opening was made with an eye to future advantage.

In 1898, Jones Bros. acquired the famous light quarry of C. E. Tayntor & Co., which was the best equipped quarry on the hill at that time and which has no superior now. It is here that the only two steel derricks in Barre are located. They are now putting in a new engine, hoister and derrick, and are soon to install a new air compressor.

They are opening up new territory in this quarry and are finding some splendid stock. This stone is recognized as being of the very best quality of Barre granite. Being of fine close grain and white, it does not absorb moisture. It will retain its color and fresh appearance for a great many years.

In 1896 the firm completed their cutting plant in Barre and it is probably the largest monumental plant in the world. It is 700 feet long and about 70 feet wide.

Outside in the yard is something over 2,000 feet of side track for facilitating rapid work. The plant inside has always had everything that has thus far been invented in the line of granite working machinery.

It was here that the pneumatic tool was first tried and it was in Jones Bros.' shed that the machine, which is to-day the greatest factor in the cutting business, was perfected. They have been ever one of the most progressive in giving a trial to new machinery. They are now about to assist a Massachusetts inventor in his efforts to perfect a machine for cutting mouldings in granite. They have produced some of the most famous monumental structures that have ever gone out of Barre.

Among the soldiers' monuments are these: At Allentown, Pa., a soldiers' monument 100 feet high; at Easton, Pa., another one 70 feet high, and other famous ones at York, Pa., Joliet, Ill., Owego, N. Y., Janesville, Wis., Watertown, Wis., and many others in various parts of the country.

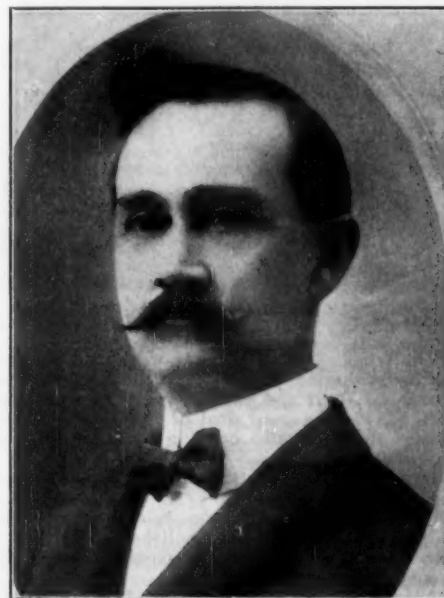
Some of the most prominent mausoleums are the Krueger vault at Newark, N. J.; Heinz vault, at Pittsburg, Pa.; receiving tomb at Washington, Pa., and at Cambridge, N. J., and the Schaaf vault in Chicago.

They have twenty more vault jobs under way at the cutting plant at the present time. The firm sells exclusively to the retail dealers.

The location of the Jones Bros. Co. at the present time consists of a finely equipped office at 161 Summer Street, in Boston, in charge of Marshall W. and Seward W. Jones, the president and treasurer, respectively, and the cutting plant and quarries at Barre under the management of Hugh J. M. Jones, vice president of the company. Dayton E. Jones, the fourth member of the original firm died two years ago.



MARSHALL W. JONES, OF JONES BROS. CO.



HUGH J. M. JONES, OF JONES BROS. CO.

Captain P. J. Rogers, of the Rogers Granite Co., was able to be at work again January 1st, after a two months' serious illness with blood poisoning.

The Innes & Cruickshank Quarry Co. have just put in an Ingersoll-Sergeant air compressor, and both the Oldham and the Kotten plug drills at their quarry. Mr. Innes is comfortably installed in a front office in the new Scompin granite building, and Mr. McLeod wears more than his usual genial smile as he sees the quarry in such first class condition to take care of the spring orders.

Geo. Walker & Sons are getting ready to put in a new traveling crane at their shed. The crane is being built by the Smith, Whitcomb & Cook Co. In the spring the firm is to build a 40-foot addition to their shed.

I found Mutch & Calder getting ready for a good lot of spring work, and Mr. Mutch, who manages the Manufacturers' Quarry, stated that all the improvements thereon are now complete, but that they have closed down the quarry until the weather becomes a little less ragged.

Joseph B. Reinhalter, of the Reinhalter Granite Co., brought back more than his customary amount of "knitting work" when he returned from a ten days' trip just before Christmas. This time it was three new mausoleum contracts. The biggest one is a duplicate of the Mackay vault in Greenwood cemetery, and costs in the vicinity of \$35,000.00. The other two are about \$11,000.00 and \$8,000.00, respectively. The two latter are to be set up in Western Pennsylvania. The firm is running forty-eight men now, and has work enough to keep this force busy until the first of March. W. E. Catto, their foreman, is now setting up a vault in Philadelphia.

Orders and Improvements.

Stephen & Gerrard are once more to startle the trade with evidences of remarkable progress. They have just placed the contract for an addition of 48 feet to their already commodious shed. When I called Mr. Stephen was just reading a letter from a Connecticut retailer, and he handed it over to me to read. After placing an order for two nice monuments the letter went on to say: "both monuments to be of your best dark Barre stock, the same kind of stock you sent me before." The last part of that is just the kind of a sentiment that all manufacturers ought to inspire in the retailer and the latter should hand it down to his trade. There is no trouble in doing this if the retailers and manufacturers hang together.

Whitcomb Bros. have built a 30-ton derrick and hoister for H. M. Laird, of St. Johnsbury.

At the quarry of Bond & Whitcomb's everything is in perfect condition. They are now running full capacity, and on January 1 the equipment was declared all in. There was quite a good-sized crowd collected there the other day to watch their new 60-ton derrick lift out a 70-ton column piece for one of Reinhalter's contracts. The machinery took care of the mammoth block of granite in a wonderfully fine manner.

C. W. McMillan & Son have had the most prosperous year since the senior member has been in business. They are busy now on short time work, and although spring orders have not come in very rapidly yet, they are perfectly sanguine about the spring and summer.

W. T. Gillespie, for the past five years a small granite dealer in Barre, died suddenly on December 22. He was thirty-four years old, and was born in Carbonear, New Foundland. He leaves a wife and three children. Mr. Gillespie had been doing a quite profitable business, though on a small scale.

A. Anderson & Sons have things better regulated in the office than ever before and are consequently in good condition to take all the work that comes their way. Spring orders are quite plentiful.

One reason why the wholesaler is popular with many dealers is that he pays promptly. Think this over, Mr. Retailer.

Alderman Frank Burke, of Burke Bros., left Barre January 2 for an extended Western trip in the interests of the firm.

Robert McDonnell spent the holidays at his former home in Buffalo, N. Y., in company with other members of the firm of McDonnell & Sons.

Parry & Jones are doing a lot of work, and have been running to their full capacity all winter.

Many of the small firms are feeling very sorry about the financial troubles of the Boston wholesale firm of Geo. H. Hitchcock & Co.



JONES BROS.' DARK QUARRY, BARRE, VT.

Business Increasing Materially.

McDonald, Cutler & Co. are getting out more work than they have been doing at any one time for several years. They have just landed another nice monumental contract better than the big one that was mentioned last month.

Jones Bros. take the banner for big jobs during the past few months at least. The latest thing in that line is the Potter Palmer tomb. This is a \$60,000.00 job and Jones Bros. have the greater portion of it. This is one of the most imposing structures of this class in America. It is to be built of Barre granite in Grecian Ionic style, is to be erected in Graceland cemetery, Chicago, to the memory of Potter Palmer, who died in that city two years ago, last May. When completed next spring it will stand forth as a triumph of art and beauty. No other tomb in Chicago will equal it and the few in New York City which are more costly will be overshadowed in delicacy and elegance of design. When Potter Palmer was laid to rest in 1902, the coffin was placed in an expensive crypt. As soon as the new mausoleum is finished the casket will be moved into an especially designed vault hewn out of solid granite within the tomb. There will be one other vault of this description and fourteen separate crypts for the use of the family in years to come. The mausoleum is to be 40 feet 7 inches long, 27 feet 6 inches wide and 28 feet high. While the pattern will be strictly Grecian Ionic, the tomb will be of the canopy order, supported by sixteen fluted columns finely carved. In the center of the floor will be the two sarcophagi, with carvings even more delicate and exquisite than those of the pillars.

Wilson Bros. have bought the plant formerly operated by Joseph Wood & Co., and later by William Magee, trustee of the Wood estate. The new owners have taken possession and are to be con-

gratulated upon their evidences of prosperity.

The Brandon Italian Marble Co., of Middlebury, gave each of their employes a turkey and cranberries for Christmas dinners.

Soapstone Operations to be Revived.

The Deavitt Soapstone Quarry, located near Waterbury, which has been worked only a portion of the time for the past few years, has passed into the hands of New York parties, who will organize a corporation and work the quarry to the limit. After they secured an option on the property they tested the stone in various ways, finding that it was an excellent non-conductor of electricity and, when ground, furnished a pure white talc powder. The stone has never been used for these purposes, but has been utilized for stone ovens, palls, etc. The new company will be organized at once. The names of those interested have not been made public.

Mr. Davis, a granite retail dealer from the State of Washington, made friends in Barre during the past month, and left orders for several carloads of work among the Barre dealers.

Announcement is made of the marriage, during the holidays, of Harry M. Ream and Miss Katherine Russell, at Zanesville, Ohio. Mr. Ream is the Barre manager for Townsend, Townsend & Co.

William R. Walker, of the firm of George Walker & Sons, was united in marriage November 30 to Miss Margaret Ryan.

Barre Notable Carvers.

Rizzi Bros. are top-notchers in the carving line and there is always something of decided interest at their plant. They are very busy this winter and have lots of orders for spring work. They are getting out some carving designs that are far ahead of anything they have ever done before. They are cutting one especially fine carved die job that is very much different from anything I have



JONES BROS.' LIGHT QUARRY, BARRE, VT.

ever seen. It consists of one base, and moulded and carved die. The ends and back are rock face. The front consists of one-half a polished panel and the other half elaborately carved poppies, with the leaves thereof predominating. The firm consists of Stephano and Mario Rizzi. Both of the brothers are expert carvers themselves and they employ the best men they can get. They started business for themselves five years ago, at which time they did all their work alone without employing any men. Now they run two gangs of cutters, numbering thirty-two in all.

Beck & Beck are making use of a very intelligent scheme, and they are getting lots of business from it. They have a series of nineteen new designs that would be hard to beat. They send them to the retailers. Beck & Beck have their fall work all out on time and are pleased with the amount of spring orders that are coming in. They began coming before Christmas. Mr. Mockershaupt, their Western man, located in Chicago, finds business good in the West.

Putting on More Men.

Barclay Bros. appear to enjoy a continual period of activity. They are still putting more men to work where they can find them.

Littlejohn & Milne have got a portion of that famous Potter Palmer tomb. They are cutting the two sarcophagi, which are elsewhere described in this letter. Their portion of the contract is in the vicinity of \$3,000.00.

At Robins Bros.' plant everything looks up to date and business-like as usual. Charles Robins has just returned from an Eastern trip and brought back several new orders.

Sketch of Daniel H. McLeod.

One of the leading granite firms in Barre is that of Emslie, McLeod & Co., and one of the most progressive business men is Daniel H. McLeod, who is now the sole owner of the business. Mr. McLeod was born in Canada and came to Vermont when seventeen years of age. He at once began to learn the granite cutters' trade, and when he had perfected himself in this line, branched out into the statuary business until he finally went into the general monumental and vault business in 1886, when an opportunity presented itself for him to buy Mr. Kilman's interest in the well established firm of Emslie & Kilman. They had been doing a good business since the Barre granite industry had opened in 1884.

Mr. McLeod is a natural financier, and he soon had the concern doing business on far better principles than ever before. They gained a reputation for strict integrity and good office management that is often spoken of by those who have



DANIEL H. McLEOD.

ever been their customers. Two years after Mr. McLeod went into the firm his partner met with a fatal accident while supervising some work in the hoisting room and he died four hours afterwards.

The surviving partner continued the management of the firm through the following year, at the end of which period he settled in full with the Emslie estate in a manner most satisfactory to the heirs of the latter, and up to the present time he has conducted the business alone very successfully.

He employs a competent manager under him, and his office help is of the best, Mr. McLeod being a stickler for this end of the business which is too often neglected by many others. He also believes in employing the best that can be had in the cutting shed.

He has two carvers in the shed, who hold diplomas from the Academy of Art in Milan, Italy, and these with other first-class artists are kept busy on statuary and specially nice work.

Among the regular stone cutters are many high class workmen, and all these together with the

up-to-date machinery, pneumatic equipment, quarry property and practical knowledge of the business is such as to inspire the confidence of the retail dealer. The plant is operated by their own steam plant.

Emslie, McLeod & Co., together with four other leading manufacturers, own an equal interest in the well known quarry of the Manufacturers' Quarry Co. This is a very promising piece of property and has recently been equipped with all the latest improved machinery.

This concern cut one of the largest and most attractive monuments that appeared in the Barre Exhibit, which took the gold medal at the St. Louis Exposition.

The firm stands well locally with the other manufacturers and with the public in general, and their credit is good, depending altogether on the retail dealers for its business.

Mr. McLeod is always so busy at home that he is unable to call upon the trade personally, but he employs a salesman in the West, and one whose headquarters are in Brooklyn, both of whom solicit trade from the retail dealers only.

Mr. McLeod has always been one of the most enthusiastic of the Barre granite men in creating a sentiment that would lead to the protection of the retail dealer. He does not believe in people having any connection with the business who carry their offices in their hats. His motto is to have the granite business in the hands of the responsible retail dealers, manufacturers and a few responsible wholesalers, who are all right.

Rock Products gladly recommends him for a square deal every time.

Michael J. Doyle, of Montpelier, has withdrawn from the firm of P. H. Conlin & Co., of that city, and the business will in the future be conducted by Mr. Conlin and John Murley, under the same firm name. The firm is located in Sweeney Bros.' old shed.

Mayor Barclay's Annual Visit.

Mayor William Barclay, accompanied by his daughter, paid his annual holiday visit this year to the veteran granite man, W. T. Spargo, at Quincy, Mass.

In regard to the litigation that is going on about the laying of new side tracks at the plant of George Straiton, a bond for \$3,000.00 was filed by the defendants in chancery court a few days ago. The title of the case is McDonald & Buchan vs. the Barre Railroad Co., John Trow, N. D. Phelps, H. A. Phelps and George Straiton. An injunction was secured in October restraining the defense from using certain side tracks to the sheds of George Straiton leading from the Barre railroad. The injunction was dissolved December 24, on condition that a bond in the penal sum of \$3,000.00 be filed, which latter was done on the 28th.

The E. B. Ellis Co., at Northfield, have begun the erection of a large storehouse for their finished granite and rough stock to be cut.

W. J. Higman, of the Denver Marble and Granite Co., of Denver, Col., made Barre a pleasant visit during the early part of December. Mr. Higman was formerly a popular granite manufacturer here and everybody gave him the glad hand. Jack is doing well in Denver.

R. J. Holpin, of Greenville, Pa., a granite dealer, bought considerable random work in Barre during his recent visit here.

Back From New York.

Matt Haley has returned from New York where he has been for the past six months helping on part of the work connected with the setting up of the immense pillars of the church of St. John the Divine, for which Jones Bros. have the contract.

Two carloads of granite from the State of Missouri arrived recently at the shed of McDonald & Buchan to be cut into columns, when it will be reshipped West again.

George More, of the firm of C. H. More & Co., has been ill for a few days in December.

The Joel Foster monument, cut for the city of Montpelier by Harry J. Bertoli, of that place, has been completed and set up in Green Mount cemetery.

H. R. Mack, of Hardwick, set a handsome dark Hardwick monument recently for Mrs. Hungerford, of New York.

Superintendent of Transportation W. E. Mullins, of the Central Vermont railway, visited the granite sheds recently with the idea of improving the freight facilities of Barre.



PART OF THE BARRE EXHIBIT AT THE ST. LOUIS EXPOSITION, CUT BY RIZZI BROS., BARRE, VT.

The Boutwell-Varnum Co.

Articles of association were filed in the Secretary of State's office at Montpelier on the 24th, by the Boutwell-Varnum Co. The capital stock is \$200,000.00, and is divided into 2,000 shares of \$100.00 each. The incorporators are James M. Boutwell, W. H. Varnum, Jessie Boutwell, G. R. Varnum and Abbie Varnum.

The employees of Trow & Holden on the day before Christmas presented Mr. Clark Holden with a handsome gold mounted ebony cane. There was a short presentation speech and Mr. Holden responded, although he was much affected at the expression of good will of which the presentation was a token. The men then went into Mr. W. M. Holden's room and with similar ceremonies presented him with a valuable diamond stud. On the same day each married man employed by the firm was given a twelve-pound turkey, and each single man received a present that was the equivalent of a turkey.

At the Bond & Whitcomb's quarry are being cut out four of the biggest columns ever quarried on the hill. The columns are 4 feet 2 inches square by 26 feet 7 inches long, and weigh 75 tons each. They are being got out for the Reinhalter Granite Co., and are a part of the bank building that is being put up by this firm at Braddock, Pa.

D. F. Ryle, of the firm of Ryle & McCormick, was given a rousing reception by all of his brother manufacturers at Montpelier recently. It was a most enjoyable time, and testified to the high esteem in which Mr. Ryle is held in his home city.

C. G. Willison, the Montpelier manager for the E. C. Willison Granite Co., has returned from a visit to Oklahoma City.

George E. Bond has gone to Michigan for a month's business trip.

Francis Sickels, an architectural draughtsman, claims that he is in possession of facts and formulae whereby at slight expense he can solidify coal ashes to the hardness of granite and render it as long-lived and durable as that of stone and use it for building purposes. He claims that it can be so finished as to represent any kind of wood and stone. It will be absolutely fireproof.

Soldier Monument for Montpelier.

The consent of the Legislature has been secured for the erection of a soldiers' and sailors' monument on the common owned by the State adjoining the Pavillon Hotel in Montpelier. Mayor Corry has been interested in the plan for the past two years, and when the matter of the Foster monument was agitated he had said he would, when the time came, have provision made so that Montpelier could build such a monument if she so desired.

Four Times President.

The Barre Granite Manufacturers' Association, at their annual meeting on December 14, paid a splendid tribute to their president, William S. Alexander, who was honored by re-election for the fourth time, by presenting him a large purse of money representing not so much a gift to be measured by dollars and cents, but as expressive of the good will and the appreciation of his associates in the granite industry.

The presentation was a thorough surprise to Mr. Alexander. It was indeed a fitting recognition of his valuable services to the association. Fully fifty members were present.

After several matters of business had been disposed of Hugh J. M. Jones arose and proceeded to make President Alexander uncomfortable. His speech in presenting the purse was a neat one. He said that he believed any man who has done his duty is deserving of recognition. All eyes were turned towards the president. He was unsuspecting. Then turning to Mr. Alexander he said:

The Presentation Address.

"I present you, Mr. Alexander, this purse as a token of our feeling and regard, and as a recognition of the splendid manner in which you have conducted yourself as president of this association. I believe that the manufacturers will agree with me that whenever any trouble has arisen in Barre and President Alexander has been appealed to he has given the small manufacturers the same treatment that he has given to the large manufacturer. I do not want you to accept this for what it is in dollars and cents but simply as a token of our feeling."



R. L. BELKNAP, MANAGER WELLS, LAMSON & CO.

The recipient was so much embarrassed that he was unable to make a response for some time, but after sandwiches and coffee had been passed around he arose and tendered his hearty thanks.

The officers elected for the ensuing year are as follows: President, William S. Alexander; first vice president, John W. McDonald; second vice president, William Barclay, Jr.; treasurer, George Robins; secretary, James Campbell. The above with H. J. M. Jones, D. F. Ryle, George Cross and A. J. Young constitute the executive committee.

The auditors are M. N. McIver and D. H. McLeod.

Ament the Strike.

It will be necessary for us to say something about the recent lockout that took place just before Christmas as the result of trouble at the E. B. Ellis sheds in Northfield. The most interesting part of it would be out of place in print, but suffice it to say that it only lasted for a few days, and as a result of it things are adjusted now in a manner that will prevent any such trouble arising again from that source. According to the agreement with the Granite Cutters' Union all trouble must be settled by arbitration without strike or lockout until March 1, 1908.

Monumental Men of Fame.

The well known firm of Wells, Lamson & Co., which is particularly well qualified to make contracts for the construction of any class of monumental or vault work and furnish original designs on short notice, was established in 1880, by Smith & Wells, the organization of the present firm dating to January, 1882, the early members of the firm being S. O. Wells, George Lamson and J. K. Pirie. Mr. Wells sold to the other two in Novem-

ber, 1891. They then had a shed at Depot Square.

In 1892, they built near what is now the northern boundary of the city limits, one of the first straight sheds that was ever built. This was equipped with the second traveling crane that had ever been made at that time. The builders were the Lane Manufacturing Co. The equipment has always kept pace with inventions.

Two years ago last October, after the death of Mr. Lamson, the business and property underwent a change, Mr. Pirie dropping out of the firm to devote his entire attention to quarrying interests, and on March 1, Ray L. Belknap, who had been with the firm for ten years, as an associate of his uncle, Mr. Lamson, became manager. He had previously been foreman and all around assistant, having learned the trade of stonecutter.

The present organization was effected June 1, 1903, and consists of a co-partnership of M. E. Lamson, A. J. Goodrich, F. P. Lamson and R. L. Belknap, the latter being the manager.

They own a splendidly equipped quarry, and have just opened a new vein of better medium stock than they have ever before produced.

Among the many famous jobs the firm has put out is the Ehret mausoleum in Woodlawn, the Lunning canopy in Woodlawn, the Hobart mausoleum at Cedar town cemetery, Paterson, N. J., for Vice President Hobart, the Ingalls shaft monument for President Ingalls, of the "Big Four," at Cincinnati; the Silvershaft at Cincinnati, and they are now getting out a big boulder job weighing 45 tons for the Overton family, at Memphis, Tennessee.

Visit to President Miller.

QUINCY, MASS., December 31.—While in Quincy a few days ago a Rock Products man had a very interesting visit with John L. Miller, president of the Quincy Association. Mr. Miller was very busy looking for dollars in his private office.

He has, by the way, about the finest granite office in New England. The outward appearance is artistic and the inside looks like business.

I went through the cutting plant and no where in the yard or inside the shed could I find a waste granite chip big enough to stub one's toe on.

Mr. Miller has a great deal of nice work under the hammer, and he certainly takes the palm for having a clean looking office and cutting shed. Mr. Miller is quite enthusiastic in his efforts to make granite manufacturers learn that they are killing the goose that lays the golden egg when they color their stock.

He also has been talking of a project that seems to be a good one and that is, to form a corporation with several firms in the business, for the purpose of conducting one joint office to do the work that wholesale firms now do.

Gludiel Bros. Co., manufacturers of monumental sculptuary, of Barre, Vt., have mailed to the trade their book showing the latest designs in such work. It is a handsome publication of the highest merit.

The Eureka Pink Granite Co., Boston, Mass., has been incorporated with a capital stock of \$15,000.00 by: George W. Sampson, president, and George F. Ramponi, treasurer.



CUTTING PLANT OF WELLS, LAMSON & CO.

QUINCY, MASS.

QUINCY, MASS., December 23.—The last month of 1904, finds business quiet in the city's staple industry. This condition is annually looked for because the trade is experiencing its mid-season lull. Then, too, the weather on this calendar month and those to follow is not well adapted for the expeditious quarrying of stock. Nor is it congenial for the workmen in the manufacturing district to fashion the quarry yield into slightly monuments, etc. The month in question has been particularly rigorous as regards the weather. There has been an excess of snow, and the thermometer has been flirting with the zero mark, all of which had a tendency to affect business.

There is considerable new work being figured upon, and were it not for the expected clash with organized labor in the spring, the manufacturer would be more sanguine for the coming season's work.

The Granite Cutters' Union notified the Manufacturers' Association December 1, that they desired an alteration of the present scale of prices.

There is a standing agreement between the organizations that when a change in the prices is desired each shall have three months' notice.

The present scale will expire March 1. The manufacturers ask for practically no amendment to the present scale except a general revision.

The cutters desire a radical change, however. They ask that the present minimum of wages of 32 cents an hour, or \$2.64 for an eight hour day, be changed to 37½ cents an hour, or \$3.00 a day. They also wish an advance of 10 per cent. on classes of work. The question of a Saturday half holiday during three months in the year does not figure largely in the new bill. If this request is granted the men will enjoy their half holiday time, and are willing to stand the brunt of time lost.

The cutters will endeavor to limit the number of apprentices to two for each gang of 12 men. At present the number is unlimited.

A committee of nine has been appointed from each organization to confer between now and March 1. It is believed that the first conference in effort to adjust matters will be held after the holiday season.

The firm of John L. Miller in South Quincy had a strike among his employees November 22. The affair hinged on the wages due a day workman. The cutter in question received the average wage of \$2.80 per day for the first two weeks of his employment. At the end of this time the firm discovered that the man was not worth his hire and his pay was reduced to the minimum wage, viz.: \$2.64 per day. At the same time the firm deducted the excess pay of the first two weeks of his employ.

He notified the union and his fellow workmen through sympathy struck. The plant was idle several days and pending a settlement by arbitration the men returned to work.

Judge Albert E. Avery, of the East Norfolk district court, was chosen arbitrator. After hearing both sides and giving the matter due deliberation,

Judge Avery gave his decision December 22, which was in favor of the employee.

He found that the man was entitled to pay for the entire time at the rate of 35 cents per hour and so orders the payment to be made.

While the manufacturers were willing to stand by Mr. Miller in protesting against the union men leaving their work pending a settlement of the difficulty, as they claimed it was a violation of the agreement signed by both parties, they were not so unanimous in backing up the method of payment.

Result of the Municipal Election.

The municipal election occurred December 6, and James Thompson, of the firm of John Thompson & Son, the Republican candidate for mayor, won out handsomely over his Democratic candidate, Peter T. Fallon, another granite man.

Mr. Thompson received the largest plurality of any candidate running for a like office, winning by over 1,000 votes over Mr. Fallon.

Mayor Thompson has long been identified with the granite trade. The firm of John Thompson & Son, of which he is the head, has a high place among the reputable firms doing business in this city. The firm, old in the matter of years, has kept abreast with the times, and is to-day doing a large up-to-date business. Nor is Mayor Thompson unfamiliar with municipal affairs. He has seen long and faithful service in the city council, over which body he presided for a term of years. During the past several years he has served the city in the capacity of principal assessor. Besides these various offices Mayor Thompson has served a term of years in the Massachusetts State Legislature.

John Hanigan, Warsaw, N. Y., W. J. Manning, Plainfield, N. J., were among the granite men to visit the trade during the past month.

The Granite Railway Co. report an excellent business for this time of year, and have orders both in its quarry and shed to keep the large force of men at work up to March 1, 1905.

Souden & Morrison have built a large addition to their cutting plant on Gilbert Street, South Quincy.

Shipments of Quincy Granite.

Following is the table of granite shipments in pounds from the various depots during 1904, with an approximated figure for December:

Month	Quincy Adams	West Quincy	Via Quarry R.R.
January	1,526,517	563,035	
February	2,022,207	1,207,790	
March	4,815,500	3,180,765	59,200
April	5,035,945	3,509,240	1,905,650
May	6,409,692	5,931,000	513,140
June	3,631,610	5,296,695	1,675,540
July	4,561,985	8,164,965	1,780,530
August	5,179,845	7,164,995	1,083,700
September	4,903,300	5,390,721	3,067,870
October	6,184,261	6,619,564	3,468,260
November	4,961,506	5,826,655	2,292,624
December*	5,000,000	4,500,000	1,200,000
Total	54,232,368	55,355,225	17,046,514

*Approximated.

The Oklahoma Granite Co. has been organized at Granite, Grear County, Oklahoma, for the purpose of quarrying and dealing in granite and other stone. The incorporators are: Jed H. Lee, Detroit, Mich., and Schuyler Powell and John H. Banghart, of Logansport, Ind.

The jury of awards at the St. Louis World's Fair gave the first prize in monumental and building granite to Dr. N. G. Long, of Elberton, Ga. The decision was a great triumph for Elberton County granite and resulted in many orders being placed for the Georgia granite.

Mr. R. C. Dulin, McKeesport, Pa., is organizing a company to establish a granite and cutting works in that city. Mr. Dulin states that the work of building the plant will be started in a short time.

NEW ENGLAND GRANITE.

MILFORD, N. H., December 13.—Harry Bishop, of this town, was frightfully mangled just before noon to-day, as the result of the explosion of a charge of dynamite at Kittredge's quarry, which is situated about one mile and a half south of the town. Both of Mr. Bishop's hands were blown off and he was otherwise badly injured. Harry Venieu, also of Milford, and a stranger named Foster, who had been employed at the quarry but a short time, were badly injured by flying debris.

Both Bishop and Venieu are married and have large families. Comparatively little is known of Foster here.

The Rhode Island Monument.

PROVIDENCE, R. I., December 19.—Through the adjustment of matters pertaining to the securing of a clear title to historic land at Valley Forge, the efforts of Rhode Island to make permanent recognition of the valor of this State's Revolutionary soldier, Capt. John Waterman, whose grave is in the midst of those famous surroundings, and also to commemorate the heroism of Rhode Island's troops during those days, are to be crowned with success. After seven year's agitation the site of the monument has been secured, and on June 19, 1905, the granite shaft will be dedicated.

The monument is a pyramid-shaped shaft 22 feet high and 10 feet square at the base.

Granite Railroad for Concord.

CONCORD, N. H., December 27.—According to statistics in the office of State Labor Commissioner Carroll, the increase in the granite product in 1904 over that of 1903 in New Hampshire, known the world over as the "Granite State," was \$349,990.00, the total product being in round numbers, \$1,505,265.00. The capital invested amounts to \$1,546,750.00, and ninety-four establishments give employment to 1716 men.

It is clearly understood that these figures represent but a small fraction of what the granite business might be if one great lack should be supplied—railroads to transport the stone to the cutting sheds. To-day, as fifty years ago, granite is drawn by oxen and horses from the quarries to the cutting sheds.

The one thing needed is a railroad to take the stone from the quarries to the manufacturing places.

The great need at last has engaged the attention of local capitalists and business men, and it is likely that the movement will be energetically pushed.

Largely Increasing Capacity.

CAMBRIDGEPORT, MASS. Dec. 31.—Rawson & Morrison have got a machine building plant that would make any stone man's eye bulge out to look at it.

They have just purchased in addition to their already mammoth works, the lot and buildings that join them in the rear, and which were formerly occupied by the Damon Safe and Iron Works Co. The new acquisition covers 28,000 square feet. The buildings are new and substantial. They were formerly used for the manufacture of vaults and safes.

They are to fit up and remodel the whole at once so that their capacity will shortly be more than doubled. Their principal products for the stone men are steam and electric derrick hoists and boom swingers. The latter is something new. They have just shipped a big hoister to J. K. Pirie, of Barre.

A Trifle Versatile.

MACHIAS, ME., December 15.—The Machias Granite Co. write us, saying: "Please note in your next issue that we are cutting the steps, platforms, basement front and fence curbing for a residence being built for Eben S. Draper, Beacon Street, Boston, Mass."

The Decatur Syenite Granite Co., Decatur, Ill., has just been organized with a capital of \$25,000.00 to quarry and manufacture stone. The incorporators are: Wm. H. Hilton, James N. Bowman and John H. Culver.

The Pittsburg Granite Co., Pittsburg, Pa., has been incorporated with a capital of \$5,000.00. P. F. Poorbaugh, Wm. Z. Jackson, Albert S. Totten, G. L. Eagye, of Pittsburg, and L. W. Carns, of Homestead, Pa., are the directors.



SECTION OF THE QUARRY OF WELLS, LAMSON & CO.

National Association of the Granite Industries of the United States.

The National Association of the Granite Industries of the United States was organized on Thursday, December 29, at 166 Devonshire Street, Boston, Mass. Several preliminary meetings had been held at which the form for organization had been prepared. This form was adopted at the meeting on December 29, which was participated in by all the leading granite interests. Temporary officers were chosen to act until the annual meeting, which will be held on the second Tuesday of February. At this meeting the regular officers will be elected and the work of the association will begin in earnest.

The prime object of the association is to centralize the influence of those engaged in the granite industries of the country. In this way the interests of each will be protected. Among other objects of the new organization is to put the industry into condition to co-operate with the workmen in such efforts as tend to relieve business from the embarrassment of strikes and other disturbances, and to prevent improper encroachments upon the prerogatives of employers. Announcement will be duly made of the place of the annual meeting. The following officers were elected until the next meeting: Seward W. Jones, president; William Booth, first vice president; J. L. Miller, second vice president; Harry Rogers, third vice president; O. W. Norcross, fourth vice president; S. J. Webb, fifth vice president; Charles F. Cheney, treasurer; William H. Sayward, temporary secretary.

Banqueting the Retail Dealers.

PHILADELPHIA, January 6.—The banquet given at the Hotel Walton last night by the local association of lime manufacturers to the retail dealers was one of the most pleasant and thoroughly successful affairs of this sort in the history of the trade in this locality.

The most cordial good feeling was manifested and there was a very general impression that results of a substantial character will follow.

The dinner was given in the banqueting room of the hotel and there were sixty men present, thirty-five of whom were retail dealers.

The table was set in a semi-circle and the decorations of the table and the room made most agreeable surroundings for the diners. The party sat down about 7 o'clock and the following menu was served:

MENU

Chicken Consomme	Brunoise	Sherry
Celery	Olives	Almonds
Escallops of Sole	Dieppoise	Sauterne
	Potatoes	Hollandaise
Spring Lamb	Mint Sauce	
Potatoes	Fandante	Panache Beans
	Sweetbread	Cutlets with Peas
	Sorbet	Maraschino
Roast Quail	au Cresson	Mumm's Extra Dry
	Hearts of	Lettuce
Fancy Ices		Assorted Cakes
Cheese		Cafe

Mr. William B. Rambo one of the pioneers of the lime manufacturing industry in this region, presided as toast master.

Mr. W. B. Irvine, president of the Manufacturers' Association, welcomed the guests of the evening in a timely, appropriate speech, in which he spoke frankly of what the manufacturers seek to accomplish, and showing how all can profit by the application of the spirit of co-operation.

Mr. Charles Cox, president of the retail dealers, responded on behalf of his association. His remarks were devoted chiefly to the demand extending principle involved in the relations between the lime dealers and manufacturers, especially to sand and cement.

Mr. Alfred D. Warner discussed the subject of sand and urged the importance of some co-operation adjustment to make the business more profitable.

Mr. Charles Warner, president of the National Association of Lime Manufacturers, discussed the work of that body.

A general discussion followed, participated in by practically every body present, the trend of which was of a most satisfactory character. In this discussion sand was a conspicuous subject. Some of the lime manufacturers are also sand dredgers, and a disposition to use sand as a premium to sell lime has had a demoralizing effect. Steps have recently been taken to bring about an understanding, and for this reason it was a live topic, and it is believed the interchange of opinion will help greatly in bringing about a more satisfactory condition of affairs.

During this discussion the lumber dealers, who are usually dealers in other building material, were urged to join the National Builders' Supply Association, and in this connection something of the work accomplished by the organization was spoken of.



National Association of Cement Users will be organized in Indianapolis, Ind., at the Claypool Hotel, January 17, 18, 19.

National Cut Stone Contractors' Association will hold their annual convention in New York at the Hotel Astor, January 18, 19, 20.

Iowa Marble and Granite Dealers' Association will meet in Cedar Rapids at the Grand Hotel, January 18.

Cement Users of the Northwest will meet in Minneapolis on January 24, 25, 26, in the Court House.

Northwestern Lumbermen's Convention will be held at Minneapolis, January 30, 31 and February 1. A large number of the concerns represented handle lime, cement, plaster, roofing materials, and a general line of builders' supplies.

American Ceramic Society will meet at the Hillman House, Birmingham, Ala., January 30, 31, and February 1.

National Brick Manufacturers' Association will hold its annual convention in Birmingham, Ala., at the Hillman House, January 30 to February 11, inclusive.

National Plaster Manufacturers' Association will hold its annual convention in Cleveland, Ohio, at the Hollenden Hotel, February 6, 1 o'clock.

National Builders' Supply Association will hold its regular annual meeting in Cleveland, Ohio, at the Hollenden Hotel, February 6, 7, 8.

National Lime Manufacturers' Association will hold its regular annual meeting in New York, at the Hotel Astor, February 13 and 14.

National Association of Master Composition Roofers will hold its fourteenth annual convention in Indianapolis, Ind., at the Claypool Hotel, on February 20 and 21.

The Port Byron Lime Association, Port Byron, Ill., has been incorporated with a capital stock of \$25,000.00. The object of the company is to manufacture lime. The incorporators are: George A. Metzgar, and Homer C. Metzgar, of Port Byron, and M. R. Metzgar, of Moline, Ill. The incorporation is the outcome of a partnership and the company has been operating some time.

SOMEWHAT PERSONAL.

C. J. Scott, of the Winchester Granite Co., paid ROCK PRODUCTS a call as the paper was going to press. Mr. Scott makes his home at Orlando, Ky., where the great sand mine of his company is located. The bark is in the heart of the hills and to approach and leave it the trains must pass through tunnels. Orlando is a brand new station and postoffice and Mr. Scott in coming to Louisville, bought the first ticket ever sold from that new station.

A jolly lot of sewer pipe men were in our city quite recently. They all expected to land a large sewerage contract over at New Albany. Among these were: Jesse Freeman, of the American Sewer Pipe Co., Pittsburg, Pa.; John Wallace, of the Blockmeire Post Co., St. Louis, Mo.; Messrs. Moritz and McNutt, of Brazil, Ind.; F. G. Proudfoot, of N. A. Williams Co., Chicago; W. J. Irwin, of Irwin Bros., general contractors, New Orleans, La.

The United States Cement Co., of Bedford, Ind., is having a great many visitors these days. The directors and stockholders are watching the start-up operations very closely. Mr. C. F. Lake, of the Osborne Engineering Co., of Cleveland, Ohio, who designed the plant and are the consulting engineers, was down to-day taking a survey of things. Mr. Meacham and Mr. Wright, of Meacham & Wright, of Chicago, were recent visitors to the plant. Mr. S. Fowden was formerly with the Peninsular Portland Cement Co., of Jackson, Mich.

Mr. Arthur V. Jones, of Harley & Jones, Minneapolis, Minn., accompanied by his wife, sailed for their old home in Wales. He is one of the successful cut stone contractors in the Northwest and was hoping to enjoy the holiday season with his family in old England.

After a service of eighteen years, Mr. E. J. Williams, on January 1, resigned his position as department manager and manager of branch houses for the Austin Manufacturing Co., of Chicago. Mr. Williams has assumed charge of the Williams Contractors' Supply Co., of Columbus, Ohio. The supply company will handle a full line of the Austin Co.'s goods as well as a full line of the Western Wheeled Scraper Co., of Aurora, Ill. A full line of supplies used by contractors will also be sold. We bespeak for his new connection a full measure of the success which has ever followed his efforts.

OBITUARY.

W. E. Arrison, president of the Sand-Lime Brick Co., of Philadelphia, Pa., died on November 22, of typhoid fever. Mr. Arrison was only twenty-eight years of age, and was the last of three brothers to die within a year. His death is particular sad to his business associates, as the company had not at that time completed their plant. Mr. Arrison had taken much interest in the outcome and his services will be sorely missed.

On October 3, Mr. James E. Hibbs died of cancer of the stomach, after an illness of many months at Washington, D. C. Mr. Hibbs was sixty-seven years of age, and was for a number of years engaged in the manufacture of brick. He was the son of the late Charles Hibbs, of the General Land Office, and was prominent in lodge circles. The deceased leaves a widow, two sons and two daughters. The funeral was conducted by Federal Lodge No. 1, A. F. and A. M.

After an illness of six months, Mr. James H. Sarvis died of a complication of diseases on October 7, at Fishkill, Ore. He was a former well known brick manufacturer of that city, and died at the ripe old age of eighty-six years. He formerly resided at Dutchess Junction, Ore., and was for thirty years employed at Aldridge Bros.' brick yard. Owing to his advanced age he had not been actively engaged in the business for several years. He leaves four daughters and three sons. The funeral was held at the home of his daughter, Mrs. F. W. Kobert, and the remains were taken to Vavilton, Orange county, for interment.

Daniel M. Fulenwider died suddenly September 28, of heart failure, at the residence of A. B. Vandegrift, 631 North Twenty-first Street, Birmingham, Ala. He was in his sixty-ninth year, and was president of the East Birmingham Iron Roofing and Corrugating Co. He was a former Confederate soldier and a highly respected citizen of Birmingham.

Quarries.

The National Quarry Owners' Association.

D. McL. McKAY, Chicago, Ill. President
W. H. WALLACE, Bay Port, Mich. First Vice President
F. A. BROWN, Aberdeen, S. D. Second Vice President
S. M. HALL, Bucyrus, Ohio. Third Vice President
E. H. DEFEBAUGH, Louisville, Ky. Secretary-Treasurer

Official Organ, ROCK PRODUCTS.

Meeting to Be Announced.

The probabilities are that the National Quarry Association meeting will be held the middle of February at a point to be selected by the officers at an early date. Some very enthusiastic letters have been received and you will be addressed personally and through the February issue with correct information as to the place and date. Make your plans to be on hand. There is much to be done in the stone business this year, and the association should aid in bringing it about.

Pleasing Prospects for Quarrymen.

The outlook for the cut stone man for the year just beginning is bright. During 1904 the demand for high grade stone was active, though that for the mediocre article was rather below the normal. This was particularly true in building operations and no street improvement work. There seemed a general desire for stone enjoying an established reputation for durability and high quality. This is accounted for to some extent by the poor character of some of the artificial stone work where it has been employed as curbing and for other uses in different cities.

As a result of the increased demand some of the quarries are increasing their capacities. Among these is the Bedford Quarries Co., of Bedford, Ind., which, besides changing the power from steam to electricity, will enlarge all its departments, and especially will add many planers. The superior qualities of the Indiana oolitic limestone, are coming to be generally recognized, and scores of public and quasi-public buildings throughout the country were constructed of it last year, while many more are now projected, work upon which will begin with the coming of spring. The use of this stone for monuments and other purposes is also increasing.

There also promises to be an active demand for such sandstone as is supplied for curbing purposes by the Ohio Quarries Co., at Amherst, Ohio. Experience in Chicago and other large cities shows that this stone gives perfect satisfaction when so used. In some instances it is said to have outlived three or four street pavements and still to be in good condition.

Large Sandstone Property.

SANDSTONE, MINN., November 20.—The sandstone from the Kettle river valley, Minn., has long been known as a desirable building stone and in many sections widely separated it has been well known and much desired. In fact it has been shipped pretty near all over the United States, but like most other large properties it has had many ups and downs. The quarries which are now owned and operated by the Kettle River Quarries Co. were opened at Sandstone by Col. W. H. Grant in 1885. At this time there was no railroad there and the stone was hauled by team to Hinckley. Later the Kettle river railroad was built which gave connection with the St. Paul and Duluth railroad and quarries leased by the firm of Ring & Tobin, who had secured large contracts for curbing in Minneapolis and bridge work from the great Northern

and other railroads. These made it possible to open the quarry in good shape. Owing to the nature or rather the physical condition of the quarry, in order to handle the stone with economy it was necessary to have some such outlet as curbing and paving in order to utilize the top stone and uncover the bridge stone. The operations are much larger than at first contemplated and development was necessarily carried further than anticipated, which necessitated the firm borrowing heavily and owing to the failure of a number of banks during the panic of 1893 the firm became insolvent, but not until after they had furnished stone for many fine residences, bridges and municipal work. During the life of the company The Great Northern, through one of its tributary lines, the Eastern Minneapolis Railway Co., extended its fields of operation, absorbing the Kettle River Co., which gave the quarries an outlet to Minneapolis and St. Paul on the south and Duluth and West Superior on the north, which gave the quarry an outlet by water.

This is the section swept by the great Hinckley fire known the world over. This fire occurred in 1894 and swept a track twenty miles broad and forty miles long, destroying the village of Sandstone completely, and was the cause of the death of fifty-two people in the little town. This fire also destroyed all the buildings and equipment of the quarry.

The next step in the history of development of these quarries was the organization in January of 1899 of the Minnesota Sandstone Co., for the purpose of operating the Kettle Rivers quarries at Soapstone. This was a good, strong company and went at it with a view of large developments, their first move being to put in a dam in the river to develop the water power for the operation of their mills and quarry machinery, this giving them 600 h. p. In order that there should be no waste, a few years later a crushing plant was added to which was fed everything which could not be made into curbing, paving block or building stone, the output being used for railroad ballast, sand for mortar, concrete and macadam, for which it was well adapted owing to the fact that it was absolutely un-susceptible to weathering action. 2½ inch crushed rock only weighed 2,200 pounds to the cubic yard. About 1900 a modern compressed air plant was added for the operation of all drills and hoisting engines. The plant is also equipped with steam power, so if water fails they need not shut down.

Quarry Observations.

The top of the stone lies about 140 feet above the river and is covered by a few feet of earth. Practically the only stripping that the quarry had since the first 26 feet, which in some cases might be called stripping, is all utilized for rubble, which is worked in three sizes and sold on the basis of 3,000 pounds to a cubic yard wall measurement and 11,000 to a cord. Aside from this a portion of it can be worked into paving block and curbing, but the demand for rubble is usually sufficient to take care of all of this and the balance, as a rule, is put through the crusher. Below this there is about 60 feet of uniform heavy bedded sandstone of the highest quality. This stone is used for paving, curbing, bridge and building work. When once the paving block business was well started at this quarry it grew with great rapidity until to-day it is one of their important lines. The production of curbing has always been a decided feature in the operations. During the fall of the present year product is being tried as a pulp stone and the physical nature of this stone suggests that it will be a very desirable one for this purpose, provided the bond is of sufficient strength.

Analysis.

An analysis by J. R. Reilly, Major of the Ordnance Department of the U. S. A., shows the following:

Silica (SiO ₂)	92.10
Alumina (Al ₂ O ₃)	2.20
Lime (CaO)	0.60
Magnesia (MgO)	0.10

Which shows it to be practically pure quartz. This analysis does not give the percentage of iron present, but the color of it which is a pinkish yellow, indicates that there is at least a little bit of iron present. Crushing test made by the State Geologist of Minnesota shows its strength to be on the bed 19,000 pounds per square inch and on the edge 17,500, which is a very high crushing strength for sandstone. This stone has been used not only in the Northwest but in the Central States and has been shipped even as far as Massachusetts. Within the last few years the property has been

acquired by the present owners, Kettle Rivers Quarries Co., with offices in Minneapolis, Minn.

The officers of the company are: General manager, George W. Bestor; president, S. B. Sarles; vice president, George W. Beach; secretary and treasurer, Charles S. Hale; assistant secretary, F. M. Barnard.

The St. Louis Gold Medal.

The Carthage Marble and White Lime Co., Carthage, Mo., have received the gold medal at the St. Louis Exposition on their white building stone which comes from their quarries at Carthage. This is the highest honor that could be awarded the stone, and shows that the high claims that have been made regarding its quality in times past, have not been without foundation.

Output Sold for Four Years.

O'HARA, KY., December 20.—The F. W. Katterjoin Construction Co. send us the following notes of interest: "Our output from December 1, 1903 to December 1, 1904, was as follows: 251,000 yards of ballast and 7,000 yards of rip rap. Our best month during the year was October. We quarried this month 27,752 yards of ballast and 700 yards of rip rap. Our quarry is 800 feet long and has a face on an average of 60 feet. We run 3½ tracks with two men and one car on each track. We have three Gates' crushers, Nos. 5, 7 and 7½, which are on a level with the bottom of the quarry. We have no incline. Our output is sold for the next four years."

A Slip of the Pen.

JOHNSTON, PA., December 18.—The Rowena Stone and Sand Co. has written us saying: "Enclosed please find check for \$1.00 for one year's subscription to ROCK PRODUCTS, commencing with the issue for November. In your issue of October you refer to us as the Dowena Stone and Sand Co. As you will note it should be Rowena Stone and Sand Co. Will you kindly make correction?"

One of the new salesmen interesting the buyers of grind stone and cut stone is George M. McGrath, of the Ohio Quarries Co., traveling from Chicago.

The J. E. Baker Co., of York, Pa., has just been incorporated with a capital stock of \$100,000.00. The company will quarry stone on a large scale and has made some preliminary arrangements toward this end.

W. N. McDonald, of Nashville, Tenn., has leased 600 acres of land near Ashland City, Tenn., for a period of 25 years and has opened up stone quarries there. A stone known as Niagara limestone, which is very valuable for foundation work, is found here in very large quantities.

J. H. Jessup, of Salem, Ohio, who owns a tract of ten acres of land, where he formerly quarried building stone, has lately embarked in the business of crushed stone, sand and plaster. His plant consists of a 25 h. p. engine as well as all the latest machinery. He is now erecting an addition to his plant which will give him increased facilities.

H. W. Clarke, formerly manager of the Clarke Bluestone Quarries, at Oxford, N. Y., has purchased the interest of John Ryan, of the firm of Ryan, Conroy & Co., and a third interest in the firm of Daniel Conroy & Son. A new company has been organized under the name of Clarke, Conroy & Co., who will operate what is known as the West Hill quarries and will largely increase their business.

The Castalia Stone Co., has been incorporated at Columbus, Ohio, by a number of Sanduskians with a capital of \$30,000.00. The incorporators are: C. L. Wagner, W. H. Wright, H. L. Hammond, J. G. Steinkamp, J. H. Parker and Mr. Breining. Options have been secured for a number of good pieces of quarry land and as soon as the organization of the company is completed several of these will be opened.

The Orleans County Quarry Co., Albion, N. Y., has been incorporated at Albany, with a capital of \$100,000.00. The incorporators are: A. S. Batt, of Tarrytown; Emory W. Ullman, of Brooklyn, and Philip S. Hill, of New York City. It is said that the new company has been organized to bid in the Medina Syndicate Quarry Co. It is also said that this syndicate, as it is called, has not done as well as it was expected. Large sums of money were lost and it was therefore unable to pay expenses and interest.

THE OOLITIC LIMESTONE BELT.

BEDFORD, IND., January 4.—Stone operations are rather quiet this week owing to the usual holiday slacking off and the desire of the men to rest and visit friends and relatives. However, nearly all mills that are idle to-day will be started up next week. A great deal of work has been figured upon and some firms have contracts for delivery to begin with good weather. Many of the mills have taken advantage of the first slacking of pressure to make needed changes and improvements in their plants in preparation for the heavy run which practically every man expects next season. Confidence is expressed on every side, and all predict that unless all signs fail next season will be a good one.

Should the demand for buff stock be heavy in the spring there will be a shortage of stock. There is more blue stock available to-day than buff, but by spring this will be scarce also. There is plenty of good mixed stock available and more of it should be used as it produces some of the most handsome effects ever seen in stone construction, and when the beauty of this stone of mixed color is fully realized it will be more sought after than either buff or blue, notwithstanding that each has many admirers and many desirable qualities for the production of handsome architectural effects.

John A. Rowe has spent the last month in making extensive improvements and a number of changes in his plant, putting in new boilers, etc., and adding an Anderson & Sons Co. diamond circular saw, and changing the location of his planers so as to give the stone cutting and carving departments more room. This plant will be ready to start up again in a week or ten days.

Manager R. F. McKinley, of the Climax Stone Co., said they had shut down for a few days during the holidays, and had hoped to get a little rest but were compelled to start up again, and were now running full force. They have added another bent to their traveler trucks and are now in good running shape.

The handsome new mill of Furst-Kerber Co. is rapidly shaping up for active production. The dynamo engine was run yesterday and to-day, and it is expected that the engine which is to drive the line shaft will be tried out to-morrow. The planers and gangs are in place already and it is probable that before February 1 stone will be going through the mill.

This plant is exciting so much curiosity from the natives that after long suffering Mr. Kerber was compelled to ask the visitors to stay out of the engine and boiler rooms so the workmen could get around to complete the installation. While Mr. Kerber was highly complimented by these visits it was absolutely necessary to give the engineers and pipe fitters more room.

The Furst-Kerber Co. are still busy cutting stone at the old plant, and do not propose to lose much time in moving when once ready.

While we failed to connect with Manager Ed Thornton, of the Bedford Steam Stone Works, the secretary of the company said they had been exceptionally busy up to Christmas and that although the works were not in operation to-day they would start up within a week again.

Geo. Dugan is the same old boy, going along with the same easy swing which convinces every one that he will deliver the goods any time he agrees to do it. Just now the plant is running light, but more men will be put on soon.

The new mill added to the plant of Wm. Bradley & Son is practically complete, and steam was up at the plant.

Both Mr. Brooks and Mr. Curtis, of The Brooks-Curtis Co., spent a part of the holidays away from home, but both are back and the plant in operation. This firm has been one of the busiest during the season and still have some contracts left over to fill at once.

Robert Reed, manager of the Oolitic Stone Co., of Indiana, is making extensive improvements on the property of the company, adding engine, boilers and a Laidlow, Dunn & Co. compressor and channelers, derricks, etc., which will all be operated by air in the future.

Wm. N. Mathews is so busy attending to legislative duties in Indianapolis, Ind., that Bedford people and visitors see little of him these days.

The two big properties—the Perry-Mathews-Buskirk Co. and The Bedford Quarries Co.—are running light, as is the custom at this season of the year. The Hoosier Mill is not running this week, but the stone cutters are working eight hours and the mill is likely to start up any day again.

Mr. John Naugle, one of the cut stone contractors who is well known as a manufacturer of monumental work and statuary from Indiana Oolitic limestone, has been on the sick list for the greater part of the last two months. Mr. Naugle is now out and pushing his business again with the same old vigor, and in his characteristic energetic way. He has had long experience in business and has accumulated many designs, and is constantly adding to his supply and says he will work out to your liking any idea you may wish developed, whether it is monumental, sculptural or architectural.

Very little is being done at the quarries except stripping, and not much of that during the real bad weather.

BLOOMINGTON, IND.

BLOOMINGTON, IND., January 6.—At the office of the "big four" we found our genial friend, D. K. Myers, again in his chair as sales agent for the four big companies, which are under the management of Henry Woolrey—The Star Stone Co., The Perry Bros. Stone Co., The Hunter Valley Stone Co. and the Mathers Stone Co.

Mr. Woolrey, as usual, was busy keeping things lined up at the various properties and looking after the numerous improvements being made.

The new mill at the Mathers' property is being pushed to completion as rapidly as possible, and if the weather does not get too severe it will be completed on contract time.

The Central Oolitic Stone Co. boys have been having troubles of their own. A few weeks ago the engine broke down and the break was so serious that it was decided to put in a new one, which will be in place in a few weeks. Owing to the very friendly relations of this firm with all others and the hustle of Manager Wm. Blair, there was no very serious delay to the firm's customers, although they were busy on several contracts at the time of the break down.

ELLETSVILLE.

ELLETSVILLE, January 6.—A. J. Thompson, of Bloomington, and Mill 3, Ellettsville, has been down to Washington on a pleasure trip, but after his rest he dropped in on a few cities in Indiana and Illinois, and landed a good big contract.

Talking with Fred Mathews, of the Mathews Bros. Co., he said the prospect looked very good for next year and that lots of work was being figured. Mr. B. F. Benjamin's new mill is still uncompleted.

STEINSVILLE.

STEINSVILLE, January 6.—The Reliance Stone Co. has been incorporated. John Loudon president, Captain Henley vice president, Theo. Loudon. A quarry will be opened just south of the Geo. W. Henley Co.'s quarry. Mr. L. N. Williams will likely be in charge of this work.

J. Hoadley & Son are operating their mills but are not crowding things much. They had a little break down, smashing a wheel in their power and breaking up a sheave or two, so Mr. Albert was on the hustle to get repairs on the ground as quick as possible.

Mr. Geo. W. Henley, of the Geo. W. Henley Stone Co., with offices in Bloomington, who has just returned from a Southeastern trip, reports things looking good down that way. Work is progressing smoothly on the Durham building which they are supplying the stone for. Mr. Bowman, at the mill, was making things hum pushing the mill to its full capacity.

We were in error last month in stating that none of the quarries at Ellettsville or Steinsville were being operated, since the Romona Oolitic Stone Co. has been taking out stone all season, at their quarry east of the railroad at Steinsville. A visit to this quarry under the guidance of M. M. Hall, superintendent of Mill No. 2 showed that Quarry Superintendent Ed Cardell was hauling stone out right along. This stone can be quarried at any season of the year.

This company, which is under the management of Mr. Fred Kessler, has a great deal of property

here and at Romona. Mill No. 1 is located at Romona and Mill 2 near depot at Steinsville. This is an old mill and the machinery is being moved to Mill 3 which is on the hill just west of the railroad. Two new gangs were added to No. 3 last summer and last fall a dynamo and electric light plant was put in. No. 3 will have ten gangs, four planers and a lathe. Four channelers are at work in the quarry and it is likely more will be put in in the spring.

Conditions are much the same in Monroe County as they are at Bedford.

The Forest Mining and Marble Co. has been incorporated at Alamogorda, N. M., with a capital stock of \$1,000,000.00.

The Angell & George stone quarry at Fort Collins, Colo., has resumed operations and has received several large orders.

S. B. Wagner & Co., of Pottstown, Pa., have purchased the Levegood stone quarry near Manat-away station for \$3,000.00.

Kruger & Son, lime manufacturers at Mount Vernon, have evidently prospered this season since they are about to build another kiln.

The Wm. H. Hughes Co.'s quarry at Fort Edward, N. Y., will shortly be reopened. The dissolution proceedings have been amicably settled.

According to reports there are valuable limestone quarries in the vicinity of Gracehill, Iowa, suitable for the crushed stone and cement work. It would appear that the right man with the proper resources would have a good future before him in this locality.

W. J. Sparks, of Mount Vernon, Ky., who has large crushed stone interests, both in Eastern Kentucky and Tennessee, has kept a constant stream of cars going over his screens all summer, which is to say he has had a good season. Mr. Sparks also operates one lime kiln near Mount Vernon.

The property of the St. Lawrence Marble Co., at Gouverneur, N. Y., has been purchased by David Hyman, of Rochester, who will largely increase the output. The sum paid for the quarry is said to have been about \$130,000.00. The property is located about one mile west of Gouverneur, and includes one of the largest and best developed quarries in this great belt. Among other improvements contemplated are sixteen gangs of saws.

Mr. Frank Ferguson and his associates are making preparations to establish a quarry near Cripple Creek, Colo. Arrangements have been made to invest \$5,000.00 for preliminary developments and work will shortly be commenced. Those who have examined the product claim that it is equal in every respect to that quarried at Quincy and Barre, Vt. It is dark and polishes very handsomely.

La Crosse Limestone.

It is estimated that a business of about \$75,000.00 a year is done around La Crosse in stone quarrying, including the work done by the government, which uses the stone for river improvements instead of marketing it.

The stone used for government work on river improvement is used just as it is blasted out and not crushed.

The principal stone taken from the quarries about La Crosse is limestone, which is used for foundations and rougher construction. The stone is easily quarried, being found in deposits in the crests of the bluffs which are cut both horizontally and vertically by natural fissures. Other stone is found and used around La Crosse, granite being taken out at Black River Falls and a sandstone near Dresbach. A grade of limestone which is far superior to the rest is taken from a quarry at Minneola.

The territory through which La Crosse exerts an influence as the commercial center contains many quarries. There are many of the smaller quarries which supply a purely local demand and they do little business. Among the larger quarries, which handle immense quantities of stone, are the following:

La Moille quarry, maintained by the government near La Moille, Minn.

La Crosse Stone Co. quarry on Grand-dad bluff, which does a large shipping and contracting business, under the management of Mr. E. S. Mead.

Wooley & Hanson quarry in Ebner's cooley, which supplies a large part of the stone used on the streets of La Crosse.

Stone.

The National Association of Cut Stone Contractors.

CHAS. H. ISELE, President Peoria, Ill.
 GEORGE DUGAN, Vice President Bedford, Ind.
 R. E. HAARSCH, Second Vice President Chicago, Ill.
 HENRY STRUBEL, Secretary Chicago, Ill.
 J. W. MELVILLE, Treasurer Pittsburg, Pa.

Executive Committee—S. W. LEDERER, St. Louis;
 E. F. GIBERSON, Brooklyn; FRED. ANDREAS, Milwaukee;
 ALBERT SHAW, Omaha; PETER GRAY, Philadelphia.

The Annual Meet.

President Charles H. Isele, of the Peoria Stone and Marble Works, and the National Cut Stone Contractors' Association, said: "The annual convention and banquet of the National Cut Stone Contractors' Association will be held at the New Astor Hotel, New York City, January 18, 19 and 20. To this convention and banquet are cordially invited every cut stone contractor and firm in the United States and Dominion of Canada. We hope all will find it to their interest and pleasure to be present and participate with us in reaffirming our loyalty to those fundamental principles—the right of life, liberty and pursuit of happiness, which are so necessary to our mutual welfare and so dear to the heart of every American citizen."

Mr. Henry Strubel, of Chicago, secretary of this association, was a recent visitor at New York and was very enthusiastic over his reception in the metropolis. After meeting the delegates at their board, where bread was broken, he was more encouraged than ever over the prospects of the association, and especially in the co-operation of the big men in the contracting business from Maine to California. If there is any contracting concern that does not know of the work of this association he should address either the president or the secretary. The latter's address is No. 293 East Fortieth Street, Chicago, but the best initiation as to who they are and what they are doing for themselves and their competitors will be for you to attend that meeting in New York. It will be an enthusiastic one and it will be a business meeting. It will also be a good social session and you can not afford to stay away. Don't forget the dates—January 18, 19 and 20, and by writing for rooms at the New Astor you will be well taken care of. This is one of the best hotels in the United States. It is one of the newest and they are well prepared to take care of the Prince from a foreign land or the American Prince who will pay \$2.50 a day and up for a room.

Leading Cut Stone Contractors.

MILWAUKEE, Wis., November 30.—A visit to the cut stone plants of Milwaukee will soon convince you that that of Fred Andres is the largest in the city, and probably the largest in the Northwest.

Mr. Andres informed us that during the last twelve months he had cut over \$250,000.00 worth of work. He is now at work on stone for the terminal offices of the C. M. & St. P. railway at Milwaukee and the library at Mt. Vernon, Iowa, and State University building at Ames, Iowa.

Mr. Andres has a plant which will readily accommodate 250 men, the plant being about 40 x 500, has a cutting shed with traveler tracks 600 feet long lying between the cutting shed and the mill and carrying two traveling cranes; one steam, one electric. The mill is equipped with 8 gangs,

11 planers, 3 lathes and a diamond saw. Mr. Andres has been making additions from year to year and materially increased the size of his sheds this last summer and is contemplating further improvements by the addition of a crusher or pulverizing machinery for the purpose of grinding all the waste material from the plant to make a filler for white mortars and for mortar for the laying of mosaic work. Fred Andres has 5 acres of ground where he is located at the present time on the Chicago and Milwaukee road, but this is hardly sufficient for his rapidly growing business.

He has been in the business about 34 years, following in his father's footsteps and increasing his business from year to year. He formerly had a partner in the business, but for a number of years he has been sole owner. He was first located at North Water and Broadway, then at 172 Canal Street for about 14 years, then 2 years at Richards & Keefe, the present location. Almost all the stone cut here is oolitic limestone. You will find on the yards Portage Entry, red and brownstone as well as sandstone. Fred Andres is well known the country over as a man who is in every way able and willing to fulfill every contract that he makes.

CUT STONE CHAT.

While in Chicago recently the writer had the pleasure of a session with several members of the craft, namely, one of the young-old men, Mr. John Tate, and Mr. Henry Furst, of the Furst-Kerber Cut Stone Co., Capt. McKay, of the Consolidated Stone Co., Frank Jones, of Jones & Hadley, Minne-



HOTEL ASTOR, NEW YORK, WHERE THE NATIONAL CUT STONE CONTRACTORS' ASSOCIATION WILL MEET.

apolis; Wm. Kissack, president and general manager American Crushed Stone Co., Chicago; Hugh Story, chief apostle and vice president of the Macomber & Whyte Rope Co. We had all adjourned to Siegel-Cooper's for lunch, and surrounding another board were J. Vandever and "Billy" W. Nichol, of the Perry-Matthews-Buskirk Quarries Co. Naturally the chat was of the stone variety and it was learned that all were making their plans to go to the annual meeting of the Cut Stone Association in New York. They had each in turn spoken of having had an active year's business, and after getting on the outside of a quarter of beef we all felt quite English, you know.

Will Run Their Own Business.

The cut stone contractors of the United States will be interested in new resolutions adopted by the executive committee of the National Cut Stone Contractors' Association, which explain themselves:

NOTICE.

Resolved, That the National Cut Stone Contractors' Association do adopt the following rules and regulations and cause same to be posted in each and every yard of all its members and be strictly adhered to:

First—That we shall run our machinery without restrictions as to hours or as to whom we shall employ to operate them.

Second—We shall cut and ship cut stone work without any restriction as to place or local conditions.

National Cut Stone Contractors' Association, By its Executive Committee.

November 14, 1904.—Certain machinery or tools used in these works are a part of the personal property of the firm, and therefore this property or the use of same can not be appropriated or restricted by others without violating laws and committing a criminal offense by depriving us of our lawful rights. Any act on part of a person or persons tending to interfere with the lawful conducting of our business, or with our employees, or with the shipping and disposing of the products of our mills or shops, such interference or intimidation is a further infringement upon our rights and contrary to laws and justice and will be sternly resisted by us.

Name of Firm.....

Projected Operations.

Des Moines, Iowa.—M. Strauss will erect a three-story store building, 66x132 feet, on Court Avenue, between Third and Fourth Streets. Brick, stone, and slate roof. Cost \$30,000.00. Hallett & Rawson are the architects. Bids will be received now.

South Haven, Mich.—Architect A. M. Worthington has plans for a two-story store and office building here. It will cost about \$6,000.00. The building will be erected for Charles E. Abell, druggist, and will be of brick, stone and composition roof.

Topeka, Kan.—Plans have been prepared by Architects Holland & Squires for a residence, 43x60 feet for C. R. Maunsill. It will be modern and cost \$5,000.00. Bids to be received until February 1.

Minneapolis, Minn.—An eight-story and basement office building will be erected at the corner of Second Avenue S. and Fourth St., for Wm. Deering, of Chicago, Ill. It will cost \$5,000,000.00. F. B. and L. L. Long are the architects. Cut stone, pressed brick will be used.

Knoxville, Tenn.—Architects Banmann Bros. have completed plans for the erection of a seven-story addition to the Empire office building for the Knoxville Office Co. Store, brick, iron top cornice, metal roof.

Louisville, Ky.—J. J. Schlosser will erect an eight-story office building, to cost \$80,000.00. The ground has been purchased.

Prattville, Ala.—The Bruce Architectural Co., Birmingham, Ala., is preparing plans for the erection of a courthouse, costing \$45,000.00, and jail costing \$20,000.00. These will be erected by Autauga County. Address the Mayor.

Athens, Ala.—The Athens Female College will begin the erection of an addition to its buildings within a few months. The improvements will cost about \$10,000.00.

Elgin, Ill.—W. H. McDoel, president of the Monon Railroad, will build a summer home near here soon. It will cost in the neighborhood of \$20,000.00. The plans have been completed.

Chicago, Ill.—Holabird & Roche have prepared plans for Mandel Bros.' new store, which will be twelve stories high and cost about \$500,000.00. Work will begin about February 1. It will adjoin their new building at Wabash Avenue and Madison Street.

Helena, Okla.—Woods County will erect a county high school building, costing \$40,000.00. Address the county judge.

CUT STONE IN THE SOUTH.

BIRMINGHAM, ALA.—If you will visit the iron city of the South and talk to the cut stone contractors, or with the architects or the general contractors, it will be evident to you that the present labor arrangements, so far as the cut stone business is concerned, are a positive hindrance to the development and beautifying of the town which is growing rapidly.

If it were not for the limitations on machine work, both Reed Brothers and the Alabama Cut Stone Co. would install more machinery and do much larger stone work than they are already handling. While the architects have a desire to specify certain work cut from Oolitic stone, which can be done most successfully by machinery, they are compelled to modify their plans so that practically everything can be cut entirely by hand or used just as it comes from the saw.

There is a strong citizens' alliance in Birmingham, and it is a wonder they stand for this condition of affairs which is bound to hinder the city.

ATLANTA, GA.—Cut stone operations have been active here during the season, with considerable future business in prospect. A portion of the sheds here are open shop, and others run union shops. Almost every manufacturer in Atlanta has operated both as union and non-union, and they seem to switch back and forth to meet the exigencies of the case at any time.

CHATTANOOGA, TENN.—Last year has probably been the most prosperous year ever seen by the Chattanooga cut stone men as a whole. The growth in the city has been very rapid, both in the way of new factories, as well as in residence property of both the elegant and more modest types. The cut stone business as well as all building operations, have been materially aided by a very successful builders' exchange, which has been in operation there for several years. The object of this builders' exchange is similar to that of most other exchanges of this sort. They are not bound by the actions of the various builders or building associations of the city. One of its objects is to acquire and preserve and disseminate business information among its members, another is to avoid and adjust, as far as practicable, controversies and misunderstandings, and provide a means or place for social enjoyment, and to enlarge the business views of its members.

A Large Finishing Plant in the South.

NELSON, GA., December 20.—The Blue Ridge Marble Co. have been well known as finishers of building marble, as well as monumental stuff, for a number of years, working not only on Georgia marble but Tennessee and Italian marble as well, both for exterior and interior work. It is claimed that this is the largest finishing plant in the South. They are especially well equipped for large and heavy work. They have been in the field since 1886. Among the buildings of note which they have supplied the marble for is that of the United States Post Office building at Tampa, Fla., which was built out of Georgia-Cherokee marble.

The plant is a sixteen-gang mill, aided by rip and circle saws, five rubbing beds, two or three lathes, and a large planer. Two locomotive cranes not only handle the block but the waste from the mill and shed.

The officers of the company are: president and treasurer, Harry Dewar; William Anderson, secretary, and Alex Anderson, general manager.

Locomotive Cranes in Marbleworking Mill.

BY C. A. BRAY, POWER AND MINING EXPERT.

The original idea of the devices shown in the accompanying illustrations, Figs. 1, 2 and 3, was conceived by Mr. George Underhill, manager of the Rutland Florence Marble Co., at Rutland, Vt., to meet the special conditions existing in that mill. The details were worked out and the machine constructed under the personal supervision of Mr. F. R. Patch, president of the F. R. Patch Manufacturing Co., Rutland, Vt., and the electrical apparatus was furnished by the General Electric Co. The machine is so admirably adapted to its duties that no essential improvements are suggested after an operation of two years. It is estimated that two of these machines now in operation take the

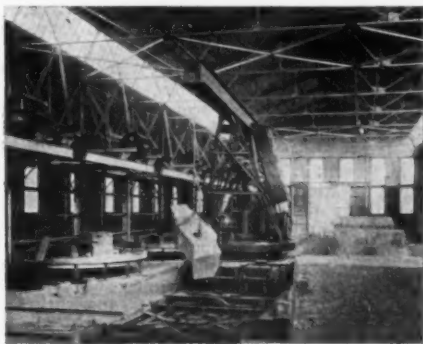


FIG. 1.

place of 25 horses and 25 men, besides numerous wagons, stone boats, etc. The arrangement and working system will be apparent from a study of the accompanying illustrations. Each of the two machines is equipped with 500 volt General Electric Co. motors, as follows:

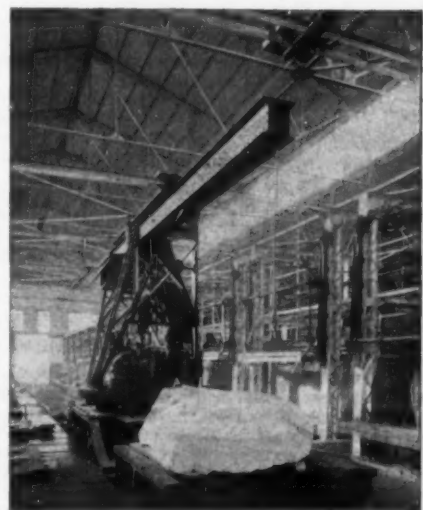


FIG. 2.

For propelling the entire machine along its track, two GE-58, Form A railway motors.

For operating two cable-reel drums, one at each end of the machine, two GE-800 railway type motors.

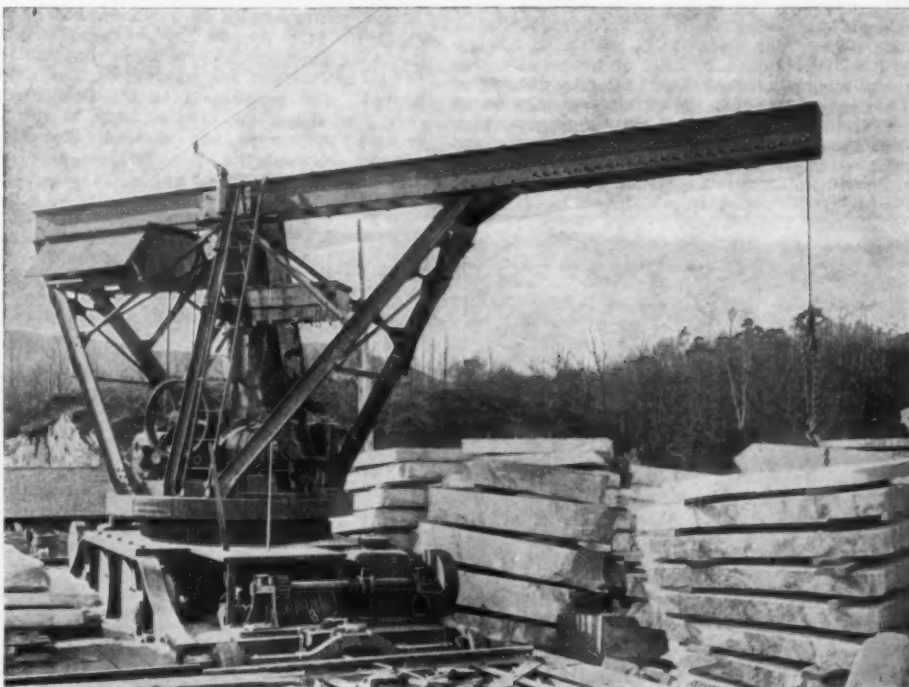


FIG. 3.

For operating a hoisting crane, one GE-800 motor.

For turning the crane, one CE 5 h. p. motor.

For operating all these motors, four controllers and circuit breakers have been grouped on the turntable part of the machine, in such a way that they all may be conveniently operated by one man. In order to effect this and attain perfect flexibility, however, it was necessary to install a 13-ring collector, fastened to the stationary king-pin and overcapped by thirteen concentric brush-holders attached to the framework of the table.

The operation and special value of the machine will be readily understood from the following description:

On being hoisted out of the quarry, the rough blocks of marble are dropped on a small truck carried on cross rails on the platform of a standard railway car, on which the marble is transferred from the quarry to the mill, a distance of about half a mile. Upon reaching the mill, the cable on one of the machine's electrically operated cable reels is attached to the loaded truck, and the latter is pulled across the track, on a loading platform, and thence to a transfer table forming part of the machine shown in the foreground of Fig. 1.

The propelling motors may then be energized and the entire machine will proceed with its load to any part of the mill. For example, the small truck containing the rough marble may be pulled off the transfer table and placed under one of the "gang saws," to be sawed up into blocks. After the marble has been sawed through one way, the machine pulls it, still on its small truck, on to the transfer table again (Fig. 2), and takes it to the lower end of the mill, where the crane on the machine turns it over and places it into position for sawing at right angles to the previous cuts. The machine then transfers the sawed marble to the stock room, or to the rubbing and finishing departments, handling it again there in whatever way may be necessary; finally storing the finished product in the yard as depicted in Fig. 3. It also handles the waste material, carrying it to the end of the track outside of the mill and depositing it on the dump. The trolley is arranged with a turning plug, and this with the 13-ring collector makes it practicable to turn the crane through any number of revolutions in the same direction without twisting any of the wire.

These specially equipped cranes have proved eminently satisfactory.

For operating the locomotive turntable cranes and for lighting the mill, two MP 6-100 Kw., 600 r. p. m. 250 volt, Form L generators have been belted to a countershaft operated from the 1000 h. p. engine which drives the main shaft for the entire mill. The switch board consists of two generator panels and one two-circuit feeder panel; one circuit being for lighting and the other for power.

Monuments.

Superior to All Others.

ROCHELLE, ILL., December 26.—"Enclosed find subscription for Rock Products. Your paper is all right. I believe it is the best of any monument papers published for the retail dealer." SHARLIN MONUMENT CO.

Monument Dealers' Meeting.

Creston, Iowa.—The annual meeting of the Iowa Marble and Granite Dealers' Association will be held January 18, at Cedar Rapids, Iowa, with headquarters at the Grand Hotel, which makes a rate of two dollars a day. The officers earnestly request the presence of all dealers, whether members of the association or not. It is expected that there will be from 100 to 150 dealers present at this meeting. This association has shown a steady growth ever since its inception. The officers are: F. M. Schwartz, president, and C. J. Field, secretary. Both deserve much credit for their untiring efforts in its behalf.

New Texas Organization.

The Marble and Granite Manufacturers' Association of Texas was formed at Waco, December 6, by about thirty of the most prominent Texas dealers. The question of perfecting such an organization was taken up several months ago and a preliminary meeting held at Llano. After this meeting calls were issued by six of the dealers to all the other dealers in the State, to meet at Waco on December 6. Owing to the great size of the State which made it necessary for a number of those whose presence was sought to travel as much as six hundred miles, only about one-fourth of all the marble and granite men came to the meeting. But this was more than was expected under the circumstances. Those who did come were full of enthusiasm and went to work with a will to accomplish the purpose that brought them.

The meeting was held at the Business Men's Club. It was called to order by J. F. Wells, of Waco, who was especially active in bringing it about. Josiah Kildow, of Gainesville, was chosen temporary secretary. After a number of enthusiastic talks dealing with the good such an association could accomplish, and the brighter view it put upon the situation for the Texas marble and granite men, it was decided to proceed with the permanent organization. Among those enrolled as

members were: E. Aten, Longview; J. C. Stenson, Greenville; E. Anderson, Bonham; Otto Zirkel, San Antonio; Curt Aberall, Burnett; J. E. Province Mc Kinney, Lyman Chamberlain, Burnett; C. A. Whitehead, Denton; Joe Mackin, Austin; U. G. Doran, Dallas; J. P. Terrell, Temple; G. W. Backus, Vernon; W. H. Simmons, Brownwood; Homer Wells, Waco; J. Gatlin, Houston; Tom Norton, Llano; W. H. Nance, Palestine; Josiah Kildow, Gainesville; J. W. Gooch, J. F. Wells, Waco, and others.

The question of a name for the organization was then taken up and after some discussion that of the Marble and Granite Manufacturers' Association of Texas, was agreed upon.

A committee on permanent organization made up of Homer Wells, W. H. Vance and Frank Teich and a committee on by-laws and constitution, made up of Joe Mackin, J. C. Stenson and Otto Zirkel were appointed. These committees retired, the other members remaining in their seats to await their reports, and holding a sort of social session.

The committee on permanent organization recommended the election of Joe Mackin, of Austin, as president; Frank Teich, Llano, vice president; J. F. Wells, Waco, secretary-treasurer. These gentlemen were unanimously elected.

The committee on by-laws then handed in its report. That part relating to who was entitled to membership caused some discussion but was finally adopted. The by-laws provide rules for the making of contracts and fix fines for those who violate these rules. The membership fee was placed at \$3.00 and annual dues at \$2.00.

After the adoption of the constitution matters of special interest to the association were discussed after which the new organization adjourned.

The next meeting will be at Austin, the time to be set by the Board of Directors, which is composed of J. F. Wells, C. A. Wheeler, Tom Norton, Otto Zirkel and W. H. Nance. To add interest to the Austin meeting a trip in a body to Burnett, Granite Mountain and Llano and a visit to the quarries is projected.

An American Westminster Abbey.

A mausoleum, modeled in many respects after Westminster Abbey, is to be erected in Montrose Cemetery, at Chicago. The building of this great burial vault is estimated to cost about \$150,000.00, and will be constructed of marble and granite. Modern improvements and ideas will obtain in its construction, and while it will resemble the great abbey in general it will also have features which the original has not. It will cost something like a thousand dollars to have one's remains laid away in this resting place.

Appreciates Its Merits.

MT. CARMEL, ILL., December 12.—Henry Burucker, proprietor of the Mt. Carmel Marble Works, writes us: "I herewith enclose New York check for \$1.00 for another year's subscription to the Rock Products. Allow me to congratulate you in the success you are making, as it is much improved. The supplement in the December issue is a fine delegation, and a body of intelligent-looking gentlemen, and a credit to the rock product community. Wishing you good health, and a prosperous New Year."

Large Monument Manufacturer in the South.

The McNeel Marble Co., of Marietta, Ga., having branch houses at Gainesville and Cordele, Ga., is sort of a misnomer since this firm's business is almost exclusively monumental work, and the bulk of it being granite, however, that does not hinder them from being a lot of good fellows. R. M. McNeel, president; E. B. Freyer, vice president, and M. L. McNeel, secretary and treasurer.

This company began business about twelve years ago in a small way. Their rule of operation has always been to do such work that each customer would say a good word for them, and it has been such a successful policy that one branch was established after the other until the present capacity was reached, and during the last year all of the plants have been required to run over time, notwithstanding that they were enlarged and more machinery installed.

It is claimed that this company handles more monuments by far than any other firm in the South.

Equipment.

The plants are equipped with rubbing beds, marble saws, polishing machines, pneumatic tools and surfacing machines. This firm believes in thorough equipment and adding anything in machinery that reduces the amount of labor or the cost of production to carry on their yards at all times a great variety of granite and marble, and have the men at work at all times on the production of new and original designs. Their field of usefulness is in the Southern States. Kotten tools and surfacing machinery are in use at this plant. Everything is manufactured by them that they sell, no matter from what particular granite or marble it is made.

A New Monumental Firm.

JACKSON, TENN., December 12.—On November 21, Messrs. J. C. Ainsworth, of Providence, R. I., and C. L. McNutt, formerly of Knoxville, Tenn., purchased the business, good will, etc., of the firm of J. T. Whitehead & Co., and will conduct the business in future under the firm name of Ainsworth & McNutt. The consideration was \$11,000.00.

Mr. Ainsworth has been connected with the Vermont Marble Co., and the Tennessee Producers' Marble Co., for about eight years, and Mr. McNutt was connected with the Tennessee Producers' Marble Co. as foreman for seven years, and has been a member of this firm for the past year. Both are honest, industrious, hustling, young business men and it is to be hoped that they will have as liberal treatment as has been accorded their predecessors in the monument business in the past.

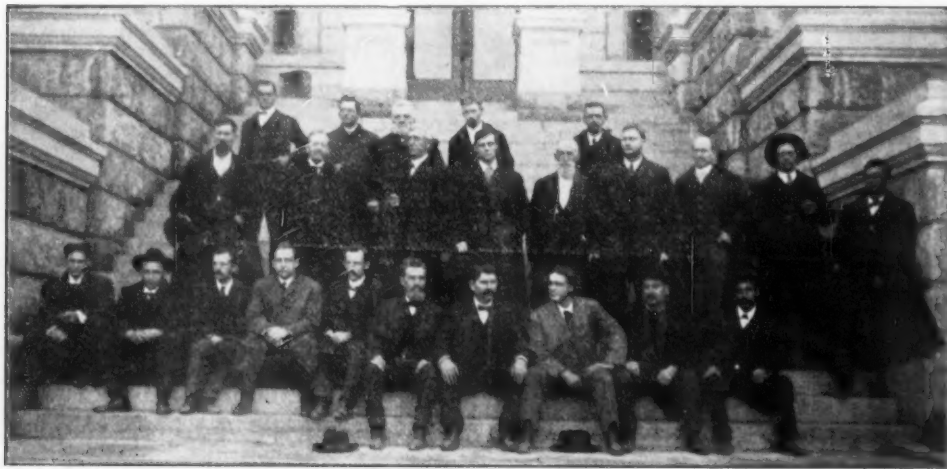
Believes in a Living Profit.

In talking with A. Hynne, 321 Jay Street, La Crosse, Wis., who probably has the largest display of monumental stock in town, he said that he believed the monument people generally in that section had had a fairly prosperous year, but some work had been done without profit and he expressed it as his opinion that the retail monument man was usually himself to blame for exceptionally low prices on monumental work, and as for his part, if any one was to conduct their business for nothing he proposed that it should be the other fellow and not he, stating that he preferred to lose a job occasionally rather than to make a price at which he or no one else could deliver a first class stock with the highest grade of workmanship throughout. He also said it was far easier to please the customer by having that customer get just what he wanted in the way of design, kind of stock and workmanship than it would be to please him with a low price.

If all the monument men would take this attitude the monument business as a whole as well as the dealer individually would soon be in much better condition.

Monument Business Fair.

RUSHVILLE, IND., December 20.—J. B. Schrichte writes as follows: "Our granite and marble monument business has been good during this year and the prospects for the next year are fair. We run two and some times three pneumatic tools for lettering and carving. We shall soon begin the manufacture of granite monuments from the rough granite. Enclosed please find money order for \$1.00 for subscription to Rock Products. I extend to you all the best wishes of the season."



TEXAS MARBLE AND GRANITE ASSOCIATION AT WACO.

Northwestern Mention.

A short visit with Mr. Lohr at the plant of the Lohr & Weifenbach Granite and Marble Works, 1144 Forest Home Avenue, Milwaukee, Wis., showed us a good sized and very substantial plant for monumental and interior marble work. This company also has an elegant office equipped with a drafting table, the top of which is an immense slab of Tennessee marble, and an elegant show room well supplied with artistic monumental designs ready to be lettered and set. Mr. Lohr was pretty well satisfied with the year's business, and said that the prospects for next year were very encouraging so far as their firm was concerned, and he looked for a marked increase in the demand for interior decorations for buildings. This firm has done some fine stucco work at several points during the last few years.

The Western Monument Works, of St. Paul, Minn., which has a good display at Third and Wabasha, after having had a rather quiet spring and early summer business, has had a good fall business, and is quarrying away at a great rate for next season under the active management of Mr. A. Stern, who succeeded Frank Erren, of this company, who has retired from the active management of the business.

The Twin City Monument Co., of St. Paul, with a plant at this city as well as plants at Lake City, Leseure and Glencoe, have had an unusually prosperous year, so Mr. Osborne says, and you can see evidence of it in the nice new plant and show room which they have just finished in St. Paul. Mr. Osborne says, "We have three months work ahead of us and thirteen cars of stock on the way from the East, mainly Barre." Mr. G. B. Turner, who was formerly with F. S. Carey, of Zanesville, Ohio, is now with the Twin City Monument Co.

A monument will be erected at Appleton, Wis., by the G. A. R. costing about \$2,500.00. The monument will be erected during the coming year.

A \$7,000.00 monument will be erected in Pasadena, Cal., in memory of the soldiers of the Civil War.

The Daughters of the Confederacy will soon begin the erection of a \$35,000.00 monument at Eufaula, Ala.

The necessary fund of \$600,000.00, for the erection of the McKinley national monument, has been completed. A design will shortly be selected.

The Iowa Cemetery Supply Co. is the name of a new organization recently established at West Union, Iowa, to manufacture monuments of all kinds.

The Excelsior Granite Co., Colorado Springs, Colo., recently began the construction of a large building for the manufacture of various kinds of monuments of rough granite.

Mrs. Sarah Fox, of Muscatine, Iowa, has donated \$1,500.00 for the erection of a soldiers' monument at that city. It is planned to have it completed by Decoration Day of next year.

The United Daughters of the Confederacy, of Marshall, Tex., have planned to erect a monument to the Confederate dead at that place; \$600.00 has so far been subscribed to the cause.

Mr. M. J. Peters, of Indianapolis, Ind., recently purchased an interest in the G. W. Duell Monument Works, of Mishawaka, Ind. The name of the concern will be changed to the South Bend Monument Co.

A monument to the Spanish-American war nurses who were killed during the war, will be erected by the Spanish-American War Nurses Association at Arlington cemetery, near Washington, D. C., at a cost of \$1,000.00.

The Alfred White Sons Co., of Cincinnati, Ohio, has been incorporated with a capital stock of \$10,000.00, by James R. Shanklin, E. P. Rogers, Harry W. Miller, Arthur E. White and Alfred R. White. They will make monuments of all descriptions.

Plans have been adopted for a memorial to A. H. Green, at New York City. He was commonly known as the "Father of Greater New York," and was murdered about a year ago at the door of his home. The monument will be erected at 110th Street and 7th Avenue in front of Central Park.

MONUMENTAL POSSIBILITIES.

Although we were unable to call on the Mound Monument Works, friends of theirs said they certainly had no reason to complain. S. V. P.

Knoxville, Tenn.—William G. Purdy, professor of mathematics and mechanical drawing at Knoxville College, died here November 25.

Louisville, Ky.—A. H. Bowman, Sr., who died at the residence of his son, A. H. Bowman, Jr., 1114 Second Street, was buried December 23.

Stroudsburg, Pa.—William C. Long, the oldest man in Monroe County, died at his home in Barrett township December 25, aged 94 years. Address estate.

Wm. A. Crottsen, also in the monument business, says things have been coming his way this season and that he has in stock a good variety all the time.

New York, N. Y.—Robert K. Carter, president of R. K. Carter & Co., died December 2, at his home, 40 East Seventy-fifth Street. Mr. Carter is survived by a widow and two children.

Indianapolis, Ind.—Howard Calé, one of the best known attorneys of this city, died at his home here December 8. Mr. Calé was for many years law partner of the late President Harrison.

Harrisburg, Pa.—Captain Daniel Meehan, connected with the Pennsylvania Canal Co., for many years as civil engineer, died at his home here of paralysis November 19, aged 64 years.

The Fox Lime and Stone Co. has a large quarry at Horlicksville and operates a crusher and get out some building stone, but with no railroad the business is necessarily mainly local.

Cincinnati, Ohio.—Edward G. Shield, railroad editor of the Cincinnati Enquirer, and widely known and esteemed by railroad men, died recently at his home here after a brief illness of paralysis.

London, Ky.—Sheldon Scoville, one of the best citizens of the county, died at his home near here December 4. He was a brother of Sheriff C. N. Scoville and father of the Hon. H. H. Scoville.

Madison, Wis.—Orson E. Woodbury died at his home here at the age of 83 years recently. He was a song writer of considerable ability and was a newspaper man and prominent in Republican politics.

Paddock & Myers, of Racine, the monument men, have had a good season and built a new cutting shed and show room, and are now considering the advisability of a small compressor and pneumatic tools.

New York, N. Y.—Captain John Westerfield died at the home of his mother at No. 321 West Eleventh Street, December 11. He was an assistant engineer in the employ of the United States government.

Portland, Ore.—John A. Gram, manager of the Washington Rubber Co., at Portland, died November 12, after a long illness. Mr. Gram's father has been a prominent lumber man at Menominee, Mich. for many years.

The Supervisors of the Forty-eighth Pennsylvania Regiment have made plans to erect on the Crater battlefield, in Prince George County, near Petersburg, Va., a handsome granite monument, to cost about \$7,000.00.

Little Rock, Ark.—Ex-Gov. James P. Eagle died December 20, after an illness of three weeks. Since leaving public life he devoted his time to plantation interests and church work, being prominent in Baptist church affairs. Address estate.

Gardiner, Me.—Ralph Lawrence, one of the most successful young lumbermen of the State, died November 14. He was a member of the T. W. Fogg Lumber Co., of Bowdoinham and was connected with other business interests. Address estate.

Minneapolis, Minn.—W. S. Hill, for eighteen years a prominent manufacturer and wholesaler of lumber, died in St. Louis at the home of his sister, Mrs. J. W. Buell, where he had gone on a visit. The remains were brought to Minneapolis and the funeral services were held at the residence, No. 1226 Second Avenue South. The widow and three children survive.

Marble

Marble Manufacturers.

MARIETTA, GA., December 20.—A recent visit to this section of the country gave us the opportunity for a brief, but very pleasant call upon Mr. A. V. Cortelyou, the new president of the Kennesaw Marble Co. This firm has long been known as one of the largest manufacturers and distributors not only of Georgia but of an Italian marble, and almost everybody in the business knew the former president, George F. Newell, who was well and very favorably known in the manufacturing business, and the firm lost a very valuable member through his death. The former treasurer, who is now president, is thoroughly conversant with all the details of the business, and will no doubt carry out the policy so long established by Mr. Newell, and make as many friends. This firm has a well equipped plant and carries a large stock of all kinds of marble.

The present officers of the company, aside from those mentioned, are: H. C. Clement, vice president, and R. W. Boone, treasurer. The new officers took their seats in November, 1904.

Dr. Mosley, who has been operating monument plants at Marietta and Atlanta, in a pleasant chat said he was centralizing his work at the Marietta plant, in so much as a change in the railroads at Atlanta had thrown him out of a desirable location. While business has been fair there was room for improvement. The doctor has a nice marble front to his Marietta plant.

The White Crystal Marble Co., of Gouverneur, N. Y., inform us that they are remodeling their plant by the installation of truck gangs. These will be the addition to their equipment of two truck gangs.

The Fox River Valley Marble, Granite and Cut Stone Works, of Appleton, Wis., has been organized with a capital stock of \$20,000.00. August Knuppel, Paul Schroeder and Charles Helm are the incorporators.

The Western Coral Marble Co., Chatham, Ontario, is the name of a new company just incorporated with a capital stock of \$40,000.00. The provisional directors are: B. Blonde, W. M. Drader, C. R. Charteris.

The King Stone Co., Galesburg, Ill., which has a contract for the stone work of the new high school building, have ordered a Diamond saw from England. The saw cost about \$4,000.00 and saws stone like an ordinary wood saw.

The H. A. Hughes Co., of Jersey City, N. J., has been organized with a capital stock of \$20,000.00. The incorporators are: H. O. Coughlin, Joseph M. Mitchell and B. Stafford Mantz. The company will deal in marble, stone and slate.

It is reported that the Chewelah Marble Co., with its quarries at Northport, Wash., are about to establish marble works in Minneapolis, Minn., to which place this product will be shipped. The only thing that stands in the way is the freight rates, but there is but little doubt that satisfactory arrangements can be made. The land for the work has been purchased, and it is said that Minneapolis will have the finest marble works in the world, when the company's plans have been completed.

The Southern Marble Co. has just been organized at Marble, I. T., by T. M. Bailey, of Muncie, Ind., and others. The new organization has acquired the property of the Beaumont Marble Co., of Marble, and will equip a modern plant with the latest improved machinery. A switch will be built to the Kansas City Southern railroad. No means will be spared to make this plant one of the most modern in the country. The company has leased 200 acres of land which contains valuable deposits of blue, gray and pink marble.

Lime.

The National Lime Manufacturers' Association.

Meets Semi-Annually.

CHAS. WARNER President.
Chas. Warner Co., Wilmington, Del.
PETER MARTIN First Vice President.
Western Lime Co., Huntington Ind.
O. F. PERRY Second Vice President.
Rockland-Rockport Lime Co., New York City.
W. B. HILL Third Vice President.
Ash Grove Lime Association, Kansas City, Mo.
C. W. S. COBB Treasurer.
Glencoe Lime & Cement Co., St. Louis, Mo.
E. H. DEFEBBAUGH Secretary.
Rock Products, Louisville, Ky.

Official Organ, ROCK PRODUCTS.

ANNUAL MEETING.

The National Lime Manufacturers' Association will hold its regular annual meeting in New York, at the Hotel Astor, February 14 and 15.

Maintain a Uniform Price.

The value of a uniform price on lime is just as essential to the welfare of those engaged in this industry as any other. The question is, does a sufficient number of lime manufacturers properly appreciate the truth of this allegation? Some complaint and just comment has been heard lately which tends to show that some manufacturers are opening their eyes to the present conditions regarding this important theme. In our last issue we made reference to the fact that there had been some price cutting in New York, which made it quite plain that no one suffered by this disastrous method of business getting but the manufacturer himself. If you desire to bestow your favors so generously on the other fellow, the chances are very great that he will not be slow to take advantage of it, often without a regret or a pang of conscience. If he can enrich himself at your loss, will he stop to consider what you are losing before acting? He's for himself, just as much as you are, and he chuckles up his sleeve at your shortsightedness.

If one manufacturer is going to hold up the price of lime and his friend over the way sees fit to knock off thirty per cent. just so he can dispose of a few more barrels, neither of you have gained in the end. You have been deprived of some good sales and he has made them at a loss. There is only glory, and that of a very meagre kind, in doing business without profit. Get the best possible price for your commodity, and maintain it at a uniform price. Slashing each other must surely result in some fatalities.



LIME KILNS OF CHAS. W. GOETZ LIME CO., GLEN PARK, NEAR ST. LOUIS, MO.

Southern Lime Active.

A recent letter from Mr. J. B. Webb, of the Standard Lime Co., of Kendricks, Fla., which is given below, indicates pretty accurately the condition of the lime business in the South, as interviews with Manager Cobb, of the Anniston plant, Sam J. Buquo, president of the Buquo Lime Co., Chattanooga, Byron Gager, of the Gager Lime Manufacturing Co., and J. B. Adams, of The Longview Lime Co., Longview, Ala., have brought out approximately the same statements.

"We beg to remind the Editorial Rambler of Rock Products that while the more northern stone and lime men have moved into winter quarters, we of the Sunny South are in full bloom and the latch string is out.

"Speaking of lime, the demand is so great that it seems impossible to keep up with our orders, although we are constantly increasing our capacity and installing modern methods and machinery. The prospects for 1905 are very bright."

One of the Largest in the West.

St. Louis, Mo., December 20.—About a week ago I spent a very enjoyable and instructive day at one of the plants of The Charles W. Goetz Lime and Cement Co., of St. Louis, where I was the guest of Mr. Phil J. Dauernheim, the president. A day in company with Phil J. Dauernheim under such circumstances is a treat in itself, for though he appears to have been born in the lime business, from the profound knowledge he has of his subject, he is a many-sided man in the best sense of the word, and takes a lively interest in many other matters which make for the world's betterment, in addition to the sciences, geology, chemistry, physics, which are of most importance to a lime manufacturer.

I found that The Charles W. Goetz Co. consists of Mr. Dauernheim as president and the estate of the late Charles W. Goetz. The president is at the same time trustee for Charles W. Goetz Jr. Mr. Dauernheim is also the young man's uncle. Under these circumstances the management is likely to

be a very effective one, with a singleness of idea and purpose that probably accounts for the smooth and successful working of everything as I saw it. The company is doubtless fortunate too in the possession of employees who take an interest in their work, from Foreman Peter McLoon downwards.

The plant which I visited, for there are two of them, is at Glen Park, situated on the banks of the Mississippi river, about twenty-four miles south of St. Louis, where the company owns some two hundred acres of land, with about a mile of river frontage. Here we find the Trenton limestone formation, which underlies St. Louis, and which is just now a subject of so much interest to the citizens on account of the fact that natural gas is usually found under this limestone formation and a deep well boring in the city, for the purpose of getting a water supply for a bakery, resulted in a flow of gas and oil instead of water.

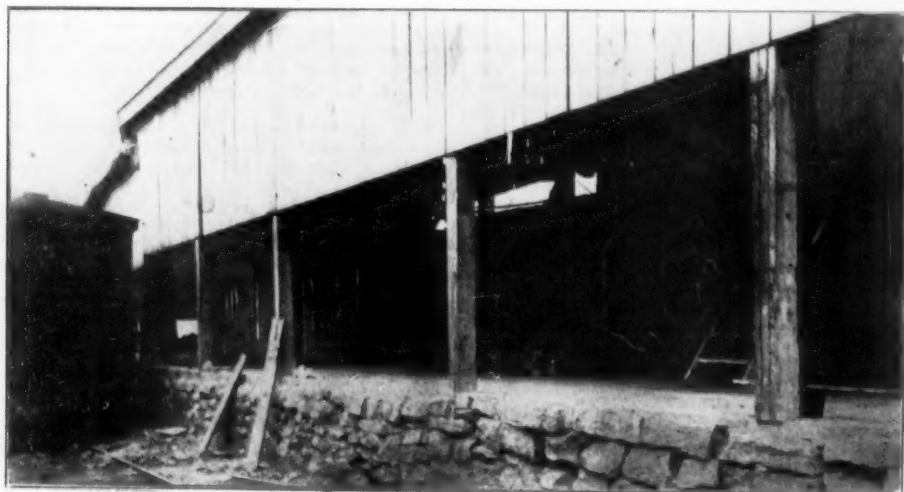
Operation Began Over Thirty Years Ago.

At this Glen Park plant lime was first made in 1881 and has been produced here without interruption ever since. Originally the burning was done with wood fuel, but the Eldred process was adopted some time ago, in which coal is used, giving a product that is quite as good as was obtained when the more expensive fuel was employed. The lime is not quite white, but it is very rich and is cool working. It slakes very freely, makes a good, rich mortar that works well and sets slowly.

Four of these Eldred kilns are running here all the time. The Eldred process is coming into such general use that a detailed description of the kilns and the working will scarcely be necessary. It takes 48 hours for the limestone to pass through a kiln and come out as calcium oxide, or quicklime. One of the points that is very carefully attended to is that the lime should be neither under nor over-burned, for lime has the property, when brought to too high a temperature, of reabsorbing carbonic acid gas and returning, more or less, to its original condition of lime carbonate. I also found that the larger lumps of lime, which are easily obtained here, are preferable to small pieces. It is shown that 80 pounds of small pieces of lime will not give as much mortar as 80 pounds of large. This is attributed to the greater amount of air slaking on the small pieces.

The annual output of the four kilns is about 300,000 bushels.

The fuel, as stated above, is coal. The best quality of bituminous coal is used and it is washed. An analysis of No. 1 Mine Run, shows: Moisture 4.0, volatile matter 31.60, fixed carbon 56.10, ash 8.10 and sulphur 1.02. The same kind of coal when washed analyzes as follows: Moisture 5.35, volatile matter 32.15, fixed carbon 57.60, ash 4.90 and sulphur 0.72, which shows that, with the exception of the addition of 1.15 per cent of moisture, the washing effects a great improvement in the fuel. The extra one per cent. of moisture does not affect the quality of the fuel, it only means that a certain number of heat units have to be used to evaporate the moisture. In connection with this question of the evaporation of moisture it is a strange thing that what seems such a simple and obvious fact, that evaporation in a furnace can only be accomplished by the expenditure of heat, is quite ignored by some men connected with furnace work, who claim to be practical men and propose to economize fuel by turning steam or water into a live furnace.



BELOW THE KILNS, CHAS. W. GOETZ LIME CO., NEAR ST. LOUIS, MO.

An Analysis of the Lime.

An analysis of the limestone shows us why the lime is of such excellent quality. It is as follows: Calcium carbonate 97.16, alumina and ferric oxide 1.74, magnesia 0.46, insoluble matter 0.36, organic matter 0.28. Ninety-seven per cent. of pure calcium carbonate is a very good showing.

We have here one gasoline engine of 8 h. p. for running four fans—one to each kiln. The fans are No. 6 Sturtevant. A hoisting engine, with boiler, of 15 h. p. A 10 h. p. portable engine, used for drilling deep holes to 20 feet in depth with a steam drill. A 6 h. p. gasoline engine, with air compressor, this has a compression capacity of 35 to 40 cubic feet per minute. A large steam drill, Ingersoll-Sergeant, and a small drill, Kotten pneumatic. The Kotten pneumatic drill was used for the first time during my visit and it was satisfactory from the start.

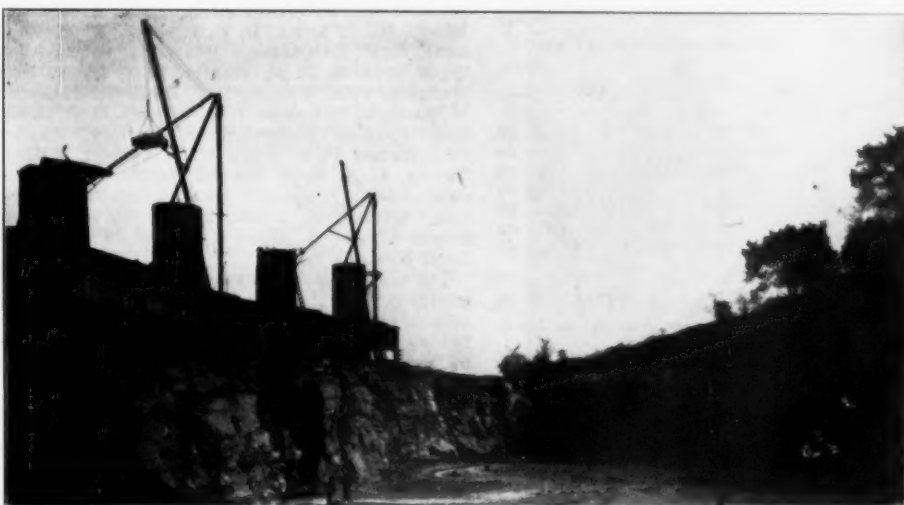
The Kotten pneumatic drill was used for small holes, from 18 to 24 inches deep and was evidently a very handy tool and labor saver. It is employed for blocks that are too large and have to be broken into smaller pieces. This was formerly hand work and the way in which the little pneumatic hammer drill did the work was evidently a surprise and delight to the man who held it and who had formerly done, what was a tedious task, with a hand drill.

At one time a portable railway track was used to bring the limestone from the quarry to the kilns, but since the face of the quarry is now not more than from 25 to 100 feet from the kilns this is not needed. One-horse carts are employed. The cart is a simple two-wheel gear with a loose box on it. The box filled with limestone is hooked to the cable of the hoisting engine and hauled up to the open top kiln, its contents dumped in. It is then lowered to its place on the wheels again. The derrick hoists the box of stone up very quickly to the top of the kiln, which is about 40 to 42 feet above the lime floor. The kiln is an iron cylinder about twelve feet in diameter, made of $\frac{3}{16}$ inch boiler plate. Inside this is another cylinder forming the actual kiln. This is of fire brick, but with a space between it and the iron shell. The space is filled with a nonconducting material that will give and take for expansion and contraction of the two cylinders.

Useful adjuncts to the plant are a cooper's shop, where the lime barrels are made and a blacksmith shop, both of which are kept well employed.

The photograph which I took from the hill overlooking the kilns shows that a railroad runs through the plant. This is the St. Louis, Iron Mountain and Southern, which gives facilities for sending the manufactured product in any direction. The principal market is of course the St. Louis district, but although the lime is not quite white, its other qualities are so good that it has been demanded at considerable distances, being frequently shipped into Arkansas and Oklahoma.

Harry and Charles Lukens, owners of the Mount Union Lime Co., of Mount Union, Pa., are receiving congratulations from the citizens of that town for giving the industry they have stood in need of for years. They fired their kiln December 15 and are turning out choice lime. The prospects for a paying business are good.



QUARRY OF THE CHAS. W. GOETZ LIME CO.

Concrete Lime Kiln.

Reinforced concrete is being successfully employed in the construction of lime kilns. The shell is of course lined with fire brick. Such kilns will stand for years at temperatures of 2,000 to 2,200 degrees Fahrenheit without perceptible damage. Kilns so constructed are said to be quite economical, when their superior qualifications are taken into consideration.

New Company in Charge.

FREDERICK, MD., December 22.—The John W. Toben Lime and Stone Co. have sold all their kilns and quarries to the Frederick Lime and Stone Co., a New York corporation chartered under the laws of New York. Mr. W. J. Vetter is secretary and treasurer of the company and will be the resident manager at the plant.

A Bright Future for Them.

WOODVILLE, OHIO, December 21.—The Woodville White Lime Co. write us: "We have just enjoyed the best month in our history, getting out more material than ever before. We expect to put in a new slacking machine, made by the Clyde Iron Works, in a month or so, which will double our output of white enamel finish. This may meet the demands of our trade but if it grows as in the past, we will soon be compelled to add another such machine. The future looks good to us."

The Elk Lime and Cement Co., of Petoskey, Mich., has just been incorporated with a capital stock of \$500,000.00.

The Wisconsin Lime and Cement Co., Milwaukee, Wis., has been incorporated with a capital stock of \$25,000.00. E. B. Meyers is secretary.

The Canfield Lime Co., of Waterbury, Conn., is erecting a fourth kiln at its plant. This was found necessary on account of its largely increasing business.

The Barnes Lime Co., Springfield, Mass., will erect several new kilns to its plant next spring. The company has already received a number of large orders for the present year.

The Blue Ridge Lime Co., Asheville, N. C., will at once begin the erection of two miles of railway from its kilns to Fletchers, N. C. With this and other improvements contemplated the facilities of the company will be largely increased.

The Missouri Lime and Cement Co., Jersey City, N. J., has been organized with a capital stock of \$50,000.00. The incorporators are: C. L. McDonald, Louis B. Dailey and H. C. Coughlan, No. 15 Exchange Place, Jersey City, N. J. The company will manufacture and sell cement, plaster, etc.

The Superior Manufacturing Co., of Superior, Wis., will immediately rebuild its plant which was recently destroyed by fire. The output of the company will be largely increased, as they have been unable to fill their orders during the past few months. While the new kilns will be erected on the site of the old ones, they will be much improved in every respect. Much of the old machinery will be used.

Cement.

An Association of the Technologists in the Concrete Industry.

Through the efforts of Cincinnati engineers it is proposed to establish a society which shall have for its object the promotion of the art and science of concrete construction. The means to be employed to bring about this end would perhaps be: First, meetings for social intercourse and for the discussion of papers.

Second, the publication of professional literature along this line.

Third, co-operation with other societies in allied work.

Such a society could not help but be a great value to the concrete industry, which at the present time is in need of the publicity of publication of exact data on which engineers and architects can base their calculations.

Further information will be gladly furnished by Henry N. Hooper, No. 46 Mitchell Building, Cincinnati, Ohio.

One as Good as the Other.

We have been asked to express an opinion as to the comparative value of crushed freestone and crushed limestone for concrete work. Both are excellent, and we do not believe that either could be said to have any material advantage over the other.

Increase in American Cement.

Owing to the large increase in the manufacture of American cement during the past few years the manufacturers of Belgian cement have suffered a material loss in their demand, which has steadily decreased. Formerly the United States was the largest purchaser of Belgian cement, but during the last few years this country has manufactured such quantities that, instead of an importer it has grown to be one of the largest exporters of cement. This change in the cement market has caused serious depression in that country, where the prices reached their very lowest limit in 1903. As a consequence many of the factories have been transformed so as to meet this depression.

Cement for the Transvaal.

United States Consul Hollis, East Africa, reports that inquiries are being made from the Transvaal for American cement. The lowest contract freight rate on cement from Germany is \$4.25 per ton net, and the rate from England to that port is \$5.10 per ton plus 10 per cent. primage. According to the Consul's report thousands of tons of German cement are being used in both East Africa and the Transvaal.

Extending a Big Plant.

J. B. Speed & Co., Louisville, Ky., proprietors of the big cement mill near Sellersburg, Ind., are constructing a spur from their mill, which is on the Pennsylvania line, to St. Joseph, in the western part of the county, in order to reach extensive shale beds in that vicinity. The purpose is believed to be an intention to manufacture Portland cement, or to change the quality of their output to conform closer to the ideas of the popular demand.

A cement company, of which C. M. Atchinson is president, has been organized at Selma, Ala., with a capital stock of \$200,000.00. The company purchased the property of J. F. Millhouse near Orville, and will shortly begin the erection of a plant to be located near Selma, Ala. The capacity of the plant will be 100 barrels a day and employment will be given to over 200 men.

A GOOD SESSION.

Large Attendance and Satisfactory Results at the New York Meeting.

The New Astor Hotel, New York, December 13. —A number of the delegates participating in the annual meeting of the Association of American Portland Cement Manufacturers arrived on Monday, so that on Tuesday morning the lobby of the Astor looked like the Waldorf-Astoria in the days when the stock speculators were all camping at that hotel, but it was a different set of men. The cement manufacturers are substantial, hustling business men with big plants on their hands and accustomed to operate with big ideas, and while they all cast their eye over their shoulders to the past twelve months with a far from enthusiastic retrospect they came to this meeting, the annual meeting of the association, expecting a friendly co-operation which means a prosperous 1905.

These meetings have occurred often enough to add enthusiasm to the pleasure of the occasion, and the crowd was enlarged from the fact that the heads and members of the sales departments of the different companies were invited to attend, and, with almost a full representation of the membership, there were pleasant greetings from the Western men and the Eastern men and the men from the Southland and the men from the Northland, and all felt that there must be something doing on this occasion and they were not disappointed—for if no action was taken on the price question it was pretty generally agreed that contracts on a flat price and for a long term were not to be the kind of contracts for 1905.

Many manufacturers who had had some disastrous experiences in 1904 had cautioned their salesmen that it was not necessary to make contracts for next year, until they had passed over

the hill of reading the trial balance and were really on the eve of a demand. For one of the curses of the cement business has been these long-winded contracts which, too often, were one-sided.

With pleasant surroundings, a beautiful room for meeting and a goodly delegation, it is no wonder that the gathering was the best one in the history of the trade and you, no doubt, will be glad to read the official report prepared by the officers.

The Annual Session.

The first session was called to order by President Lober on Tuesday at 11 o'clock, a. m., and Secretary Young and Assistant Secretary Warner were on hand, and the roll being called forty-five of the fifty mills included in the membership were represented. The capital employed by the membership of this association is something like \$50,000,000.00, and the output of Portland cement produced by these companies is something like 30 per cent. of the total production in the United States.

Reports were received from various committees detailing the work of the association for the past year. The treasurer's report submitted showed a prosperous financial condition. The most interesting report was from the Committee on Uniform Inspection, steel concretes and new uses for cement. The Committee on Uniform Inspection have been co-operating with the committees of the American Society of Civil Engineers, American Society for Testing Materials and American Society of Railway Engineers on Maintenance of Way, and the Institute of Architects. The result of the reports of these committees is a consensus report, embodying a set of uniform specifications and methods of testing cement, which have been approved by the associations interested.

The effect of the proposed specifications will be the means of standardizing the manufacture of Portland cement in the United States. It will insure a more stable price, it will be more satisfac-

tory to the manufacturer and the dealer, it will make contractors smile, it will aid in increasing the sales of Portland cement.

The recommendation of the executive committee that the dues be advanced will secure that committee with the means to provide for chemical research and the gathering together of information from the great markets of the world, which should be responsible for big increases in exportation of Portland cement, and thus, in times when trade is dull and there is too much capacity, prevent any anxiety among large manufacturers with big investments about reducing their stocks, and so strengthen the market in more particulars than one.

The re-election of officers resulted in the following:

J. B. Lober, president; vice president, A. F. Gerstell, and treasurer, E. R. Ackerman.

Executive Committee—Charles F. Wade, E. M. Hager, T. H. Dumary, T. J. Brady, W. W. MacLay, S. H. Bassett, E. M. Young, W. H. Harding, S. B. Newberry, R. W. Lesley, W. R. Warren and D. McCool.

The Committee on Legislation reported on tariff matters and reciprocity treaties, bringing out information as to possibilities for export business. It was also stated that two gold medals were given the association, one for the cement exhibit and one for the model laboratory at the World's Fair.

The Committee on Concrete-steel reported co-operation with committees representing the Iron and Steel Industries, American Society for Testing Materials, and American Society of Civil Engineers. These committees are engaged in an effort to formulate standard methods of construction. It is a recognized fact that the cement industry is open to a certain measure of injury by the possible failure of reinforced concrete-steel constructions, due to improper plans and careless methods. It is to avoid this danger that these several committees are co-operating.

ANNUAL DINNER.

The annual dinner of the association was served at a T-shaped table, with J. B. Lober, president, toast-master, in the center of the T. The others at the table were: F. N. Goodell, Clifford Richardson, Charles M. Seager, E. M. Young, M. J. Warner, W. H. Stayton, G. W. Hackett, W. Purves Taylor, M. E. Calkins, W. D. Lober, Thomas M. Righter, L. C. Smith, E. R. Ackerman, Charles A. Matcham, A. St. John Newberry, William Turner, Gabriel Bloom, W. W. MacLay, Byron Lapham, D. McCool, F. W. Shore, W. C. Kent, George Dieckmann, W. S. Erdell, S. W. Hartwell, C. J. Reilly, H. A. Schafer, Charles Warren, R. B. Dickinson, R. E. Griffith, L. A. Roed, G. A. Burridge, P. H. Hampson, Gaston Denes, H. B. Warner, C. H. Bourwood, C. C. Pratt, John A. Miller, George G. Sykes, Morris Metcalf, R. B. Blery, F. W. White, A. F. Gerstell, H. Wessel, C. H. Wood, C. P. Jamison, E. Bravender, Joseph Bropton, C. A. Lockard, J. W. Kittrell, R. Z. Morell, W. P. Warren, T. H. Dumary, R. W. Lesley, Joseph B. Wight, Charles S. Hill, Thomas J. Brady, Charles F. Wade, E. M. Hager, W. H. Harding, S. B. Newberry, W. J. Prentice, Norman D. Frazier, Oscar Pfeiffer, D. Millen, W. R. Dunn, D. E. Rinhard, F. V. Whitmore, E. R. Root, Joseph P. Lennig, H. B. Green, W. E. Wuerth, M. M. Hunter, L. V. Clark, John Woodrug, F. M. Smyth, C. A. Hardraft, Frederick W. Kelly, H. C. Cowan, H. L. Whaley, C. H. Rorinsing, Herman Eesser, W. S. Mallory, William Plankington, F. B. Scott, W. P. Corbett, William Turner, L. A. Reed, Elwood Snyder, C. A. Newcomb, Joseph Z. Burg, C. Weber Jones, W. F. Cowham, William N. Beach, F. M. Hoover, Albert Mayer, Alfonse H. Alker, G. Bartlett, F. W. Ziffer, Adolf New.

The menu was made up of the best the market afforded, and the 100 delegates enjoyed every minute of this session. No one felt lonesome, the fellowship reached from one end of the T table to the other and back again, and our host, Muschenehim, did himself proud.

When the coffee was placed on the table and the cigars passed, the following gentlemen made good talks: J. M. Goodell, Clifford Richardson, E. M. Hager, R. W. Lesley, T. H. Dumary, E. M. Young, Charles F. Wade, D. McCool and J. H. Stayton, who was the last speaker, brought down the house.

Imports of Portland, Roman and Other Hydraulic Cements

MONTH OF OCTOBER, 1903			10 MONTHS ENDING OCTOBER, 1903	
COUNTRY	BBLS. 380	VALUE	BBLS. 380	VALUE
United Kingdom.....	36,371	\$41,782 00	132,218	\$ 162,439 00
Belgium.....	55,035	61,013 00	713,101	819,835 00
France.....	1,175	1,915 00	11,634	18,591 00
Germany.....	102,115	126,827 00	1,272,542	1,636,247 00
Other Europe..... 00	27,839	29,656 00
British N. America.....	631	1,162 00	4,447	8,132 00
Other Countries.....	2,737	4,206 00	9,741	15,543 00
Totals.....	198,064	\$236,995 00	2,171,522	\$2,690,443 00

EXPORTS.

October, 1903..... 46,569 barrels, value \$ 63,877 00
 Ten months ending October, 1903..... 237,614 barrels, value 359,535 00

Imports of Portland, Roman and Other Hydraulic Cements.

MONTH OF OCTOBER, 1904			10 MONTHS ENDING OCTOBER, 1904	
COUNTRY	BBLS. 380	VALUE	BBLS. 380	VALUE
United Kingdom.....	\$	16,855	\$ 22,186 00
Belgium.....	56,312	66,036 00	340,469	398,691 00
France.....	1,231	2,027 00	29,757	38,369 00
Germany.....	53,429	72,714 00	444,421	572,002 00
Other Europe.....	783	1,954 00	7,092	10,265 00
British N. America.....	92	187 00	596	1,179 00
Other Countries.....	3	18 00	8,285	19,863 00
Totals.....	111,850	\$142,936 00	847,475	\$1,052,555 00

EXPORTS.

October, 1904..... 103,851 barrels, value \$141,568 00
 Ten months ending October, 1904..... 531,761 barrels, value 779,147 00

†IMPORTS—Decrease for month, 1904, on 1903, 86,214, \$94,059.00.

IMPORTS—Decrease for 10 months, 1904, on 1903, 1,324,047, \$1,637,888.00.

†EXPORTS—Increase for month, 1904, on 1903, 57,282, \$77,691.00.

EXPORTS—Increase for 10 months, 1904, on 1903, 294,147, \$419,612.00.

†Kindly note.

WEDNESDAY'S SESSION.

On Wednesday morning the delegates were slow about getting around, the midnight session following the banquet was still under the eaves of the Astor, but was a jolly one, and, therefore, it was past 10:30 when the meeting was called to order, but the following papers were read, and elicited active discussion and the interest of the entire body:

"Cement Testing," by Mr. W. Purves Taylor; "Irregular Methods of Testing Cement," by Mr. H. A. Schafer; "Reinforced Concrete," by Mr. Chas. S. Hill; "Some Further Investigations in Regard to the Constitution of Portland Cement," by Mr. Clifford Richardson.

When the meeting adjourned at 3 p. m. the president announced that luncheon would be served in the hotel, and the board was surrounded by hungry men. It was another pleasant gathering, and it was almost tea time before the gentlemen arose. Many of the delegates had planned to leave the city that evening, but all went home satisfied that this had been an occasion in the history of the cement industry.

CONVENTION CHAT.

One of the first to greet the Rock Products man was N. D. Frazier, who is president of the Chicago Portland Cement Co., and his general sales agent, Mr. J. W. Woodruff. They look forward to a very good business year in 1905.

Horace D. Haight, representing Thomas Prosser & Sons, and selling Krupp machinery to the cement manufacturer, favored the delegates with a Krupp gun-metal match box, and it was a peach, too.

George S. Perkins, of the Ingersoll-Sergeant Drill Co., representing the power plant department, dropped in.

Oscar Pfeiffer, of Pfeiffer Bros. Engineering Works, Kaiserslautern, Germany, was very enthusiastic over the reception accorded him by American manufacturers.

C. H. Woods, of the Wolverine Co., Chicago, and Coldwater, accompanied by Mrs. Woods, did Old Point Comfort and Washington, and spent a week in New York in connection with this meeting. This being vacation time he enjoyed renewing old acquaintances and, incidentally, dropping in on the official family while at the Capital.

One of the hosts of the occasion, and he made it his constant endeavor to make everybody feel at home, was T. J. Coplay, president of the Coplay Portland Cement Co. He was accompanied at some of the sessions by Mr. Ralph Peverly, one of the sales agents of this company.

E. M. Hagar was accompanied by Mrs. Hagar.

That barrel of cement with the doves that was wheeled in on the banqueters, was not quite a success, although the suggestion was a good one. If the price question was thoroughly threshed out and everybody made up their minds to get \$1.25 for 1905, or not sell cement it would be better for all concerned.

One of the Western banqueters gave some straight talk on the price question and the necessities of the case and it was well received.

R. W. Lesley was dubbed the Grandfather of the Association and he exerted himself to make it an enjoyable affair, ably assisting President Lober, who feels the honor of re-election for a second term, and was bending his every energy to make the Association a grand success.

The Association could not do better than elect H. B. Warner for secretary. "Little Harry," as he is familiarly known by his friends, and, by the way, that is pretty nearly everybody in the cement business, is chuck full of enthusiasm and he had information at his fingers' ends for the membership, under the guardianship of the president.

W. R. Warren, who presided over the Wednesday's lunch, before permitting the delegates to be served, was called on to say a word, and he said, "This is a happy occasion. For two years we were suspicious characters, evidently, for it would have been hard to get as many cement men around the same board. To-day it is different, although I think we might look at the surroundings a bit, and, while it does not apply to our business, we might have the thought that comes to us and often is put on perishable articles, 'Don't store near the boiler.'"

The grandson is one of the new members, Mr. John M. Carrere, of the Penn-Allen Cement Co., of Allentown.

Don't look through blue glasses during 1905. It would not hurt anybody if an advance of five cents a month were added to Portland cement for the first six months and two and a half cents a month for the next six months.

Stop making long winded contracts on a flat price.

Charles F. Wade, of Jonesville, Mich., the dean of the Michigan delegation, came early and then rushed home as if Christmas was coming.

Charles Johnson, of the Castalia Portland Cement Co., of Castalia, Ohio, is one of the big, broad gauge boys, but he was so busy looking after the recent visitor, Mr. Johnson, Jr., that Pa Prentice said he could not get away, but Messrs. Prentice and Hackett, of the same company, held the fort to good advantage.

An interesting piece of information was furnished the cement buyers by the Whitehall Portland Cement Co., whether it is co-incident or attesting the uniformity of their manufacture. The ultimate tensile strength manufactured during three years with a standard quartz sand 1 to 3 at 28 days did not vary more than six pounds to the square inch. This information was brought out in the reports of the Department of Public Works by W. Purves Taylor, engineer in charge.

Manager Meatcham, of the Lehigh, is a believer that the kilns operating in cement would work well in lime. This company is preparing to do a greater business in cement in 1905 than ever in their history.

George Burrledge, of the Newaygo Portland Cement Co., Grand Rapids, Mich., had his sunny countenance with him.

Sandusky Portland Cement Co. report business as very good, having all they can do, and with good prospects of its continuance.

Nice Cement Job.

We illustrate a nice job of concrete work consisting of porch, floor, steps, fence and walk at Winter Place, near Cincinnati, Ohio, which was done during the past season by Mr. James C. Denholm, now in the employ of the Southern Roofing and Paving Co., concrete contractors, Louisville, Ky. This job was all completed by Mr. Denholm without any assistants. He did his own mixing, made all the molds and false work beside the actual concrete work.



SAMPLE OF CONCRETE WORK DONE BY JAS. C. DENHOLM, OF THE SOUTHERN ROOFING AND PAVING CO., LOUISVILLE, KY.

Big Cement Mill for Puget Sound.

Plans have been perfected for the erection of a cement factory at some place along Puget Sound, with business offices and headquarters in Seattle, Wash. The new company will be known as the Puget Sound Portland Cement Co.

W. W. Butler, of this city, has for some time endeavored to interest Eastern men of experience in such an enterprise, and has finally secured the co-operation of a Mr. Miller, who has conducted several large cement mills throughout the East. The exact location of the mills and the quarries will be made known just as soon as the legal transfers are made and title passes to the new company.

Almost Completed.

At a meeting of the stockholders of the El Cajon Cement Co., held at its offices, 309 Stevens Building, Detroit, Mich., recently, the following officers were elected: George B. Loud, president; R. A. Richards, first vice president; Selig Solomon, second vice president; H. K. Loud, secretary and treasurer.

"The company is in first-class shape," said Mr. Loud. "It is being pushed to completion rapidly, and we hope to be making cement early in the spring. The property is situated near Alpena, on the Detroit & Mackinac, and has an unlimited amount of material. When we get started we will turn out a fine grade of cement."

The Louisiana Cement and Lime Co. has just been organized at St. Bernard, La., for the purpose of purchasing the property, rights and contracts of the Louisiana Lime Co., of Borgne-mouth. The new company will build a Portland cement factory on said property with a capacity of 1,000 barrels per day. The new concern is composed of New Orleans and Pittsburg capitalists. The officers are as follows: William J. Kelly, president; William A. Lombard, vice president; Robert A. Warriner, treasurer, and Matthew Warriner, secretary. It is expected that the factory will be completed and in operation within about four months time. A total of \$375,000.00 will be expended in the construction of this plant.

The Almdares Cement Co., of Havana, Cuba, had their plant destroyed by fire to-day. Loss, \$300,000.00, partly insured.

The Mississippi Valley Portland Cement Co., of Dover, Del., have increased their capital stock from \$200,000.00 to \$300,000.00. The incorporators are residents of Chicago.

THE USES OF HYDRAULIC CEMENT.

Review of a Valuable Contribution to the Practical Information So Much Needed.

The Ohio Geological Survey has just issued another of its valuable bulletins on economic problems of the day. Bulletin No. 2 on the uses of cement, by Frank H. Eno, C. E., Associate Professor of Civil Engineering in the Ohio State University.

This bulletin contains a great deal of very valuable information for thousands who are interested in cement construction of any sort. The matter has been thoroughly handled and contains much valuable data in the way of specifications and costs. We know how much this bulletin has been needed by the public, because of the large number of inquiries we have had at this office on many of the points which are here covered.

This book may be obtained through Professor Edward Orton, Jr., State Geologist, Columbus, Ohio, and the price will be only the cost of publication.

The first chapter is devoted to a very brief history of cement, citing the latest well known cement structures, calling faithful attention to the Pantheon of Rome, which was built 27 B. C., and has a concrete arch 142 feet in diameter, which is still in perfect condition. Modern cement of course does not date back so far, as Portland cement on a commercial scale, probably was not manufactured longer ago than fifty years. It is probable that the first Portland cement was made in England about 1824, France 1846, Germany 1855, and in the United States about 1875 or 1876.

The uses of cement is taken up and treated under three heads, namely: In mortars, in plain concrete and in reinforced or steel concrete construction. The use of cement in mortar dates back to the earliest time. The advantages of cement mortar over lime mortar are pointed out in the following weak characteristics of lime mortar as compared with cement mortar; lack of tensile or cohesive strength, porosity, inability to harden under water; also the necessity for contact with air that the lime may take carbonic acid from the air sufficient to thoroughly harden it and these various points are discussed at some length.

Comparing Natural Versus Portland Cement.

He says a rapid setting mortar is needed without great ultimate strength, and natural cement will fulfill the requirements at a less cost than Portland, and gives the following table comparing the two cements when the work demands an ultimate tensile strength of 200 pounds per square inch:

For Portland Cement Proportions 1 to 5			For Natural Cement Proportions 1 to 2		
0.97 cu. yds. sand at	\$1.25	\$1.15	0.81 cu. yds. sand at	\$1.25	\$1.01
1.12 bbls. cement at	2.50	2.80	2.49 bbls. cement at	.90	2.24
		\$3.95			\$3.2

The effect of various sands upon water are discussed and much data given. With reference to the amount of water used his conclusions are that 7 to 10 per cent. of the tensile strength is lost by using too much water, and 30 to 40 per cent. by using too little.

The result of considerable experimental work done by students of the Ohio State University, to determine the permeability of cement mortar is cited; the following conclusions were arrived at that the permeability of mortar depends upon:

- First—The ratio of sand to cement.
- Second—The voids in the sand.
- Third—The percentage of water used in making the mortar.
- Fourth—The thickness of the mortar.
- Fifth—The head of water pressure.
- Sixth—The amount of tamping.

With reference to the allowable amount of loam, we would judge that 7 or 8 per cent. of loam in most sands is a desirable thing for cement work, but that the safe limit is probably somewhere near 20 per cent., that is, a sand carrying 18 or 20 per cent. of loam should be condemned for mortar purposes.

Colored Mortars.

A table of colors, what to use to produce it and what quantities, is given. On the cause of hair-cracks or sun-cracks, the writer, as a result of his own experience and some twenty-two replies to inquiries, is of the opinion that the real cause is that

the mortar at the surface is too rich in cement. Some very interesting data is given with reference to the use of lime in cement mortar. The conclusion was that 10 to 20 per cent. of lime paste added to cement mortar will not materially affect its strength, and cheapens the cost of the mortar $2\frac{1}{2}$ to 5 per cent. Greater additions of lime paste decrease the strength rapidly. The additional small amounts of lime paste causes the mortar to work much easier under the trowel.

On Ornamental Work.

Mr. Stevens, of the Stevens Cast Stone Co., as well as a number of others, are quoted.

The result of Mr. J. M. Newhouse in the use of Portland cement upon common iron work, is given. This was applied at a place where ordinary paint only lasted about three years, and this has been on now four years and is comparatively in good condition. Mr. Newhouse gives the following formula:

- 12 pounds red lead.
- 32 pounds of Portland cement.
- 2 pounds of Japan.

Add sufficient linseed oil to make, when thoroughly mixed, a soft, putty-like mixture. Apply with a trowel upon thoroughly clean metal.

The Use of Cement in Concrete.

This chapter includes descriptions of the various uses of concrete, such as footings, foundations, retaining walls, abutments, culverts, monolithic structures, concrete block, bridges, towers, sea walls and breakwaters, sewers and electric conduits, water pipes, reservoir cisterns, dams, tunnels, railroad ties and road beds, sidewalks, curbs and gutters, posts, burial vaults and furniture. Illustrations and descriptions are given, and in many cases details on the cost of construction under certain existing conditions.

Concrete foundations were in use as early as 1872. The United States Government Building at Chicago was built upon a cement foundation slab several feet in thickness, and in 1897 it was necessary to use rock drills and dynamite to remove this foundation. It was only during the last decade, however, that railroad companies have been developing concrete construction. The New York Central and Hudson River railroad limit the use of concrete piers or abutments to bridges which have a span of less than 200 feet. The abutments built recently on the Dayton, Springfield and Urbana electric road cost at the rate of \$5.75 per cubic yard, the day labor being \$1.50 for ten hours, cement \$2.10 per barrel.

With cement \$1.40 per barrel and sand at the rate of \$4.00 per car of twenty cubic yards, the cost is about \$3.50 per cubic yard.

Lake Shore Retaining Walls and River Levee.

Some retaining walls have been put in, using the natural cement of 1-2-4 proportions, to within about a foot of the surface, finishing with Portland cement. The excavation cost 50 cents per cubic yard, natural cement concrete \$4.00 per cubic yard, the Portland concrete cement \$6.25 per cubic yard. The levee wall at Columbus, Ohio, cost at the rate of \$5.75 per cubic yard. The oldest concrete house built in the United States is on Staten Island, New York, erected in 1837, using natural cement concrete.

The Palmer concrete block machine is described, estimates of costs made, as well as the cost of production by the American Hydraulic Stone Co.

It is probable that the first concrete bridge of any size was built at Belleville, Ill., in 1895.

Masses of concrete has been much used for the foundations, pedestals and sub-structures of towers and monuments.

It is claimed by a number of engineers that concrete sewers are cheaper than brick. In many cases where sewers have been built and plastered with cement mortar, after the forms were removed, this plastering has been found to have scaled off. Bids for sewers were recently accepted at Columbus, Ohio, in which the cost of concrete sewers was 85 per cent. of the price bid for brick construction.

The following cost of concrete foundation was carefully kept in Toronto, Canada:

	Cost per cu. yd.
Cement at \$2.275	\$2.15
Broken stone at \$1.91 per cu. yd.	1.43
Gravel and sand at \$0.80 per cu. yd.	0.21
Labor at 15c per hour	1.04
Total per cu. yd.	\$4.83

Or with concrete six inches deep, 80½ cents per square yard. The concrete used in this case was 1 cement, 2½ sand and 7½ stone.

Paving and Sidewalks.

Concrete has been used as a surface paving material with considerable satisfaction in Philadelphia, streets and courts in Grand Rapids, Mich., as well as four streets in Bellefontaine, Ohio. The latter were put down in 1892, and are in excellent condition. The concrete was laid upon a well compacted road bed in two layers, the foundation layers four inches thick and the surface layer two inches thick. In two of the streets the foundations were composed of one part Portland cement and five parts coarse gravel, and the surface coat three parts cement to five parts coarse sand. Both top and bottom layers were cut into blocks about five to six feet square, and tarred paper used in the joints to give room for expansion. The street cost \$2.15 per square yard.

Concrete sidewalks have long been in use. A good concrete walk, if not on well drained soil, should have a sub-foundation of from four to ten inches of well compacted gravel or cinders, on this there should be laid a base of 3½ inches with a 1 inch wearing surface.

Walks should be cut into blocks about five feet square, taking pains to cut only through to the foundation.

Mr. Eno does not advise the use of natural cement on the base and Portland cement for the top.

The cost of cement walks from 1902 to 1903 ranged between 14 and 17 cents per square foot. Concrete curbs and gutters were recommended as very desirable.

The Concrete Mile Post.

Concrete has been used in fences and fence posts in different shapes and designs, and recently the Illinois railroad has put in a good many mile posts. These are eight inches square, 8 feet long, standing four and one-half feet out of the ground, and weighing 198 pounds. The cost of the post is as follows:

¼ barrel of cement, at \$2.00	\$0.50
267 pounds of crushed stone	.01
133 pounds of sand	.01
1½ hours of labor, at 15 cents	.20
Carpenter, changing letters, ½ hour, at 25c.	.08
Coloring in cement	.02

Total cost of post.....\$0.82

One of the latest novelties is the manufacture of concrete butts for telegraph poles. This is done by casting a concrete base with four iron strips bolted on, which extend above, so that when the telegraph pole rots off at the ground it can be sawed off and placed in this concrete base and bolted fast.

The co-efficient of expansion has been found to be very close to that of steel, and is 0.000055.

The Uses of Cement in Reinforced Concrete.

The history of reinforced concrete found the first efforts in this line somewhere between 1869 and 1875, getting its start in this country about the same time as in foreign countries. Mr. Eno says that during the last four or five years many different systems have been developed, few of which have introduced any radical ideas into reinforced concrete construction. Concrete has great compressive strength, but lacks reliable, uniform tensile strength. For this reason, reinforcement is desirable.

Tests which have been made at Perdue University, show that one per cent. of reinforcement placed one inch from the bottom of 8x8x80 inch beams increased the strength from 2,200 to 7,400 pounds, and increased the flexibility of the beams from a center deflection of 0.01 inch to 0.14.

The qualities for which concrete are sought are, non-corrosion in moist places, non-rotting under any condition, resistance to fire and weather, deadening of sound and ease of construction. With a few competent men, unskilled labor can be largely used on this work. The question as to what iron and steel members will remain safe from corrosion and consequent weakening, has received considerable attention, and cement users are pretty well decided that there is no danger from this source when neat cement, or a mortar rich in cement is used. There may be danger, however, where cinders or porous concrete is used.

Professor C. H. Norton, of Boston, after experimental work, arrived at the following conclusions:

First—Neat cement thoroughly prevents rust.

Second—Concretes should be dense and without voids and mixed quite wet to prevent rusting the metal.

Third—Corrosion found in cinder concrete is mainly due to iron rust in the cinders and not to the sulphur.

Fourth—Cinder concrete free from voids and well rammed wet is nearly as effective as stone concrete.

Fifth—It is of the utmost importance that the steel should be clean when it is imbedded.

The experts in reinforced concrete differ materially as to the necessity of taking precautions to prevent the separation of the metal and concrete when the whole is under strain. It has been determined that it increased somewhere between 530 pounds to 732 pounds per square inch of adhering surface to extract a rod imbedded in cement, if this adhesion force amounted to 625 pounds per square inch, round steel bars would need to be set but 24 diameters deep in the mortar to require a breaking limit of the bar in order to pull them from the cement. The various systems of reinforced concrete are described, and some of them illustrated, but space will not permit taking them up here.

In floors in fire-proof buildings the old method of arching brick or massive concrete between steel I-beams is too cumbersome, and add too much weight to the building.

It is not uncommon to-day to find four inch floors of steel concrete spanning 18x22 feet bays. Stairways and elevators are also constructed of steel concrete. Columns, instead of being built as formerly with a heavy iron pier in the center veneered with cement, are now built with concrete steel columns reinforced by small vertical iron rods. Chimneys and large storage bins and grain elevators as well as water towers, bridges and culverts, of every size, type and description, have been made from reinforced concrete, and many examples are cited, giving more or less of the details of each.

Recently quite a little steel concrete work has gone into the sewer construction as well as in water pipes. Steel has also been introduced into concrete fence posts, which are made for corner posts 8½ feet long by 8 inches square at the base and 6 inches square at the top and weighs about 500 pounds, and cost per post from 30 to 35 cents apiece. The line posts are much lighter, being 7½ feet long, 3½ inches square at the bottom and 2½ at the top, weighing about 60 pounds and cost from eight to twelve cents each.

Concrete piling has been much used and varies somewhat as to method, one of which drives a steel case with a collapsible core, removes the core and fills this case with the concrete. Concrete railroad ties have been tried a number of places, and it is proposed to build a concrete elevated railway system. The reinforcing of concrete for use in dams is past the experimental stage, and is still in growing favor.

The Fireproofing Feature.

Considerable attention is given as to the behavior of reinforced concrete under fire. Chapter five is devoted to specifications for concrete materials, taking cement first, condition of delivery, time of delivery, housing, testing of cement as well as specifications for the sand and crushed stone, with the proportions in which it should be mixed and how the mixing should be done. These specifications are prepared with a view of serving as a guide for cases of construction where the improvements was not such as to demand that an experienced engineer assume the responsibility of the work. Specifications adopted by the American Railway Engineering and Maintenance of Way Association are given, as well as those adopted by a number of cities for special work. There is also some valuable hints as to what specifications should be for concrete sidewalks and how they should be built.

In chapter six he aimed to give a general idea of the run of machinery and tools in use in the production of concrete work.

Mr. Eno deserves much credit for the thoroughness with which he has gone into this matter, and we are satisfied there will be a big demand of the State geologist for copies of this book. It is a very valuable addition to the literature on concrete.

The Harpers Ferry Cement Co., Washington, D. C., has been incorporated with a capital of \$500,000.00. The incorporators are: George W. Torrence, J. D. Curry, C. M. Curry, Frank Hill and A. M. Rogers.

The Standard Stone Co., of Pittsburg, Pa., has been organized by L. E. McKain, L. B. Magley and Mark G. Hibbs, all of whom are residents of Trenton, Pa. The capital stock of the new organization is \$100,000.00 and they will manufacture and sell cement.

Whitehall Portland Cement.

One of the most successful concerns of its kind in existence is the Whitehall Portland Cement Co., whose general offices are in Philadelphia, 712 Reading Terminal and works at Cementon, Pa. By their thorough knowledge of the industry, their energy and the excellence of the article they manufacture the members of this firm have built up an enviable reputation with the trade, as a result of which their business is constantly growing. Its present volume has reached enormous proportions. To give them a trial order is usually to become a regular customer, as their methods make it a pleasure to deal with them and one can be sure, too, that he is always getting cement of a strictly standard quality.

The officers of the company are: Thomas M. Righter, president; Oliver Williams, vice president; W. B. Whitney, treasurer, and W. C. Kent, secretary and assistant treasurer. The directors are: J. S. Wentz, M. S. Kammerer, Thomas M. Righter, A. C. Leisenring, D. B. Wentz, L. A. Riley, W. W. Watson, George D. McCreary and B. F. Fackenthal, Jr.

H. B. Green is sales agent with an office in the Land Title Building, Philadelphia.

Whitehall Portland Cement Co., after a thorough investigation of the quality of the argillaceous limestone deposits in the Lehigh Valley, decided to erect their plant at Cementon, Pa., as the materials in that locality were found to be unsurpassed in quality by any in that region.

The engineers in charge of construction were, from the beginning, instructed to spare no expense in equipping the entire plant with mechanical devices of the best type and latest invention, the

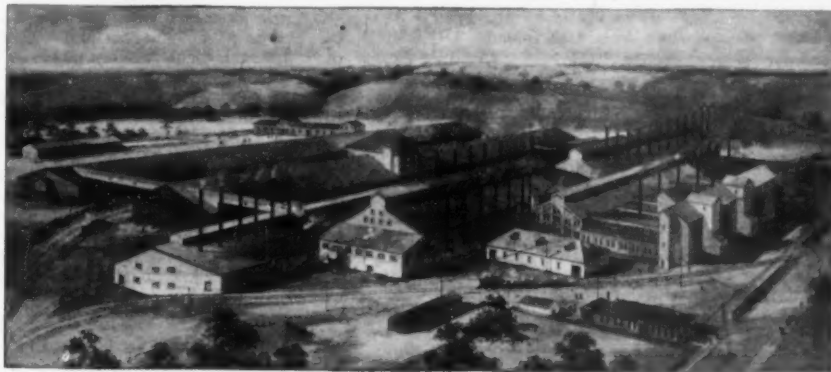
As a just reward for constant and successful effort to maintain a high degree of perfection in the quality of the output, the manufacturers have received prominent recognition among the leading engineers and architects, who have used thousands of barrels of Whitehall Portland cement with the best possible results.

Whitehall Portland cement will be used exclusively in the erection of the A. H. Pugh Printing Co.'s building at Pike and Fourth Streets, Cincinnati, Ohio. This is said to be the largest reinforced concrete building in the United States. It is 68x335 feet, and seven stories high in the front and nine in the rear, owing to the slant of the ground. The footings, walls, columns, girders, beams, floors, roof, pent houses, tanks, partitions, hot air ventilating ducts as well as shafts, chimneys and stairs, are of reinforced concrete. Not a particle of wood, brick, or structural steel is used in the building. All window frames and sash are metal, and glazed with wire glass. This construction is designed to be the most incombustible building ever constructed.

The retaining walls are in place 25 ft. high, and only 6 in. thick, made possible by reinforcing the pilaster to withstand the bending moment produced by the earth pressure.

The columns are placed 20 and 23 feet from centers in one direction and 14 to 17 feet in the other direction.

All floors and girders are figured to carry 230 pounds per square foot. The cost of the building complete will not exceed 7 cents per cubic foot, for which price it will be impossible to construct such a building in the so-called mill construction. Therefore, capitalists who can grasp the economy of armored concrete construction, will be able to



PLANT OF THE WHITEHALL PORTLAND CEMENT CO.

objective point being the production of the highest grade of American Portland cement.

From the standpoint of construction, the plant is a model of engineering science. Having the raw material of correct chemical composition at hand and a complete and up-to-date mechanical equipment, the next step was to secure skillful supervision for each department of the works. The company's success in this important feature has been the means of developing every department to the highest degree of technical and practical skill, subjecting each step in the production of Whitehall Portland Cement to such careful and intelligent supervision that users of this brand are always sure of receiving the highest grade of cement, of absolute uniformity in strength, fineness, color and chemical ingredients.

The capacity of the works is 1,250,000 barrels per year, manufactured entirely by the rotary kiln process, and every barrel that is shipped is guaranteed to meet the most exact requirements of engineers, architects, and builders, and any scientific specification covering cement of the highest quality.

It is especially recommended for such important uses as cement-concrete bridges, docks, sidewalks and ornamental stucco construction and for heavy foundations, dams, reservoirs and other engineering operations of an important character.

The general excellence of Whitehall in every particular admits of its use with economical results with sand mixtures, as is demonstrated by its ability to carry a maximum quantity of admixtures with the greatest strength. Notwithstanding its perfect supervision over the manufacturing department, the company has, as a final safeguard, a laboratory for chemical and physical tests, where the entire product is examined before shipment.

erect fireproof buildings instead of firetraps for the same capital invested. Mr. A. H. Pugh, being an engineer, was enabled to see at once the great economy of reinforced concrete construction and therefore adopt it. Messrs. Diltoe and Wisenall are the architects. This firm have likewise designed the reinforced concrete Blymer building of Cincinnati, Ohio. The concrete in the Pugh building is being done by Messrs. A. Bentley & Sons, of Toledo, Ohio. The first two stories are about complete which brings the structure up to the street level on the front end of the building.

The fact that Whitehall cement was chosen to be used exclusively in the construction of such a building speaks volumes upon the subject of its general excellence.

The Wayland Portland Cement Co., Wayland, N. Y., has purchased about 800 acres of valuable limestone land at Janesville, N. Y. This company has a large plant at Wayland, N. Y., but it is reported that they will build one at Janesville, which will be the largest in the State. They will erect a large number of buildings and will employ quite a number of hands.

The Edison cement plant, Washington, N. J., has made arrangements to immediately begin the enlargement of the plant. A new stock house, roaster buildings and coal plant will be built. The improvements will be quite extensive and will require a force of about 500 men. It is not expected that the plant will be completed before next summer.

The Durham National Cement Mill, Durham, Canada, is working night and day and is turning out about 28,000 barrels per month and is still unable to fill its orders.

Artificial Stone

He Likes Rock Products.

QUEBEC, CAN., December 17.—"Enclosed find renewal of subscription to Rock Products. I am well pleased with the paper and read with interest the correspondence on making good concrete blocks. I am a bit doubtful, however, about making good blocks 7 or 10 to 1."

(Signed) IGN. BILODEAU.

Cement Users at Indianapolis.

Preparations for the convention of cement users in Indianapolis on January 17, 18 and 19 are now nearing completion, and the prospects for a most successful meeting and the formation of the desired association could not be brighter. Charles C. Brown, chairman of the local committee in the Hoosier metropolis, states that he does not expect an attendance of less than 500, and that it will probably run over that figure.

The Central Passenger Association between Chicago and St. Louis, Pittsburg and Buffalo, north of the Ohio river and the Trunk Line Association east of Huntington, W. Va., Pittsburg and Buffalo to New England and south including the Chesapeake and Ohio railroad, grant the convention a rate of one and one-third fare on the certificate plan. The Western Passenger Association between Denver and Chicago and south including Kansas will likely do the same.

Headquarters will be at the Claypool Hotel, where the exhibits also will be installed. This feature promises to be very elaborate and of great practical value. More than 3,000 square feet of exhibit space has already been contracted for and more will be occupied. A highly instructive programme has been arranged, among the features being papers on "Waterproofing of Concrete Blocks," by G. B. Kirwan, of St. Louis; "The Testing of Cement," by Richard L. Humphrey, a Philadelphia expert; "The Methods and Results of Cement Testing," by Walter Buehler, assistant city engineer of Indianapolis; "Quality of Sand," by James C. Hain, Engineer of Masonry Construction, Chicago, Milwaukee and St. Paul Railway; "Practical Mixing of Mortar and Cement," by Kirk H. Brown; "The Mixture of Concrete," by A. L. Goetzman, of Chicago; "The Testing of Cement Blocks," by John R. Allen, Junior Professor of Mechanical Engineering, University of Michigan; "Coloring of Cement," by P. J. Sherer, of Milwaukee; "Waterproofing of Concrete," by W. H. Finley, Principal Assistant Engineer Chicago and Northwestern Railway Co.; "Concrete Fence Posts," by J. A. Mitchell, of Goshen, Ind.

The social features will not be neglected, and a smoker or banquet will be provided for in the programme. On this occasion speeches will be made by Ex-Mayor John W. Lane, of Carthage, Mo.; Dr. Geo. F. Row, of Circleville, Ohio; Arthur N. Pierson, of New York City, and others.

One feature of the convention will be a question box which will be opened at frequent intervals. Those who have particularly hard nuts to crack are requested to send them to Charles C. Brown, chairman of the Local Committee, who will assign them to some expert for solution.

While the first suggestion of the formation of A National Association of Cement Users came from the concrete block men the scope was enlarged so as to include all users of cement, and the programme has been arranged, as can be seen above, so that those engaged in any line of the industry will derive profit from an attendance at the convention.

The official programme, which will be issued shortly, will contain instructions for getting reduced railroad and hotel rates and other information. It is announced that there will be three times as many machines for the making of cement blocks exhibited as was shown at the St. Louis Exposition.

Minneapolis Convention.

The convention of manufacturers of various articles of cement called for January 24-26, in Minneapolis, promises to be a conspicuous success. An attendance of 500 is confidently expected. This is the first convention of cement users of the Northwest. The convention is to be held in the Court House where there is ample space for all purposes.

The programme is not yet complete, but arrangements have been made for speeches by F. M. Henry and C. A. P. Turner, of Minneapolis, and L. F. Brayton, of St. Paul, to be freely illustrated.

It is intended to devote a fair portion of the time to every line of manufacture represented, including concrete blocks, sidewalk work, cement, brick and tile work, and concrete fireproof construction. The convention will have a great educational value and nobody who can go should miss being there. Many forms and styles of machinery will be on exhibition, and the papers on every subject will be by experts.

J. W. Cooper, of 615 Lumber Exchange, Minneapolis, will give any further information regarding the convention that may be desired.

Organized to Do Concrete and Engineering Work.

The National Concrete Construction Co., Louisville, Ky., has just been incorporated with a capital stock of \$25,000.00. The officers are: J. B. Oligschlager, president; Webster Gazely, vice president and chief engineer, and B. M. Haming, secretary. Mr. Gazely has been connected with the Louisville Water Co. for the past seventeen years in the capacity of assistant engineer, and is a man of wide experience in concrete and engineering work. The company will do a general business in reinforced concrete work, including bridge abutments, foundations, walls, etc. They will also act as consulting engineers, and are prepared to undertake work of the most advanced kind in concrete of all descriptions.

Artificial Stone in Germany.

The Prussian Government is erecting a building at Settin of imitation sandstone or beton. This is the Government Insurance Building. The main staircase railing is of imitation red granite which has a polish equal to granite itself, and it requires a very close examination to detect the difference. The skeleton of the building is of ordinary brick faced with imitation sandstone which is joined with cement. The windows, columns, roof, balcony and other parts of the building are cast so as to fit exactly and consequently require no chiseling; this could be done however, if such were required. In order to obtain the ordinary effect of granite, ground black marble is used; while for red granite, red marble is required. For ordinary block work wood forms are used, but for the more elaborate pieces plaster of paris molds are found necessary. In pressing the material into the molds only the hands are used. When dried by natural means it requires from three to four weeks before the blocks are thoroughly dried and ready for use. While just as durable in every respect as natural stone the cost is at least fifty per cent. cheaper. The best formula for mixing beton is generally conceded to be as follows: 1 part cement, 3 parts sand, 5 parts ground stone.

The Kaiser a Manufacturer.

The manufacturers of sand-lime brick and other building materials will be glad to know that "Der Kaiser," the real thing in Germany, is the proprietor of a brick-making works at Cardinen, West Prussia. The brick from this factory will be used in building the German Imperial bank at Dantzig, also the interior decorations made from majolica ware will be supplied from this factory.

The German tradesmen and some of the royalty object to the Kaiser's entering into trade owing to the fact that a man's going to business puts his competitor at a disadvantage because his industry will be exempt from the national and municipal taxation.

HOLLOW BLOCK DISCUSSION.

Should Cement Block be Faced With Veneer of Richer Material?

EDDYSTONE, PA., December 15.—In reply to your inquiry about facing concrete blocks with a richer mixture of concrete, will say that our opinion, gleaned from experience, is as follows: A block faced one to two, with a backing of one to five, is not any stronger than one made of four parts sand or gravel to one of cement, nor does it make a water-proof wall, no more so than a well burnt brick. To make an absolute water-proof wall out of concrete, it would be necessary to trowel or smooth the outside surface with neat cement, which of course would spoil the rock face effect. A block made one to four will stand all that is required for a dwelling, just as much so as any other building material, such as brick or stone, and will be as near water-proof. In facing a block you can lay it in the wall a little earlier than a block made one to four, but after six months the block made one to four will be almost as strong and stand very nearly as much pressure as the one faced; in fact, the difference is not worth considering. We use the Winget machine and can face blocks with it if we so choose, but do not face them unless the purchaser desires it, and then he pays for the extra material, as the backing is the one to four mixture which we use in the manufacture of all our blocks. (Four parts Jersey gravel and one of Whitehall Portland cement.) In facing blocks unless you mix the proper amount of facing to work up the amount of backing your block is liable to lose its face. In other words if you mix enough facing at one time to make up two or three batches of backs, your blocks are very apt to go wrong. The only way to make a No. 1 block is to give it the same texture all the way through, the same as brick or granite.

We also expect to attend the convention of Concrete Block Manufacturers at Indianapolis on the 17, 18 and 19th of January, 1905.

With deepest interest for all that will advance the condition of the manufacture of concrete blocks, we are,

Yours very truly,
CHESTER CONCRETE BUILDING BLOCK CO.

Does Not Recommend Facing.

BURLINGTON, IOWA, December 6.—Yours of the 29th received, and note that you have been asked to discuss the advisability of facing concrete blocks with a richer material and determine the crushing power when so faced.

It has been our experience that a concrete block faced with richer material gains no crushing strength whatever, as the facing is seldom more than one-half to an inch thick on the face or projection of the block. It adds no strength to the building but is simply a veneer to give the building a better appearance and to make the block or building more impervious to water. We do not recommend facing blocks. For instance, if the body of a block is made 6 parts sand and 1 cement and faced with 2 parts sand and 1 cement the difference in the cost of labor facing the block will pay for the additional material used to make the block of one composition or mixture, and it stands to reason that a block made 2 parts sand and 1 part cement straight through is better than a 6 to 1 block faced with one-half to 1 inch of the richer materials. The difference in cost to manufacture a block size 32 in. long by 12 in. wide by 9 in. high made 3 sand and 1 cement and 6 parts sand and 1 cement will not exceed 5 cents per block made on our Chicago machine. So it can be readily seen that it does not pay to skimp on the cement. We recommend increasing the core as the size of the block is increased. Some manufacturers of cement machinery use the same core in an 8 in. block that they use in a 12 in. The consequence is there is too little cement used in the mixture to make a first class block. For instance take a block 32 x 12 x 9 in., using 8 in. core and a block of the same size, using 4 in. core the same number of pounds of cement to be used in each. Cure these blocks under the same conditions and the test will show that the 12 in. blocks with an 8 in. core will sustain 40 per cent. greater load than the block with the 4 in. core. It also makes a lighter block to handle and requires less sand. A great many manufacturers of cement stone, not being posted, insist on using a small core. The consequence is to make a cheap block, they do not use enough cement for the proportion of sand. If they would use a large core the same amount of cement used in the block with small

core and less sand they would have a much superior block.

To a prospective customer a block with a small core that looks heavy and massive, even if made practically all sand looks strong, but as any cement user knows that the strength does not lie in the sand but depends upon the amount of cement used which stands to reason that a thorough investigation should be made as to the size core to be used in a certain size block. The size of the core depends greatly on the height of the building, but at the present time there are few block buildings going up more than three stories in height. We do not recommend facing blocks, but do recommend, if any one wants a 3 to 1 face on the block to make the entire block 3 to 1. The difference in the time and expense of facing will pay for the extra cement used.

The manufacturer of cement stone can well afford to make all his product strictly 3 parts sand and 1 part cement and compete with any of the standard building material if he is properly equipped with up-to-date machinery for manufacturing cement stone.

Trusting the information given above will meet with your approval, we remain, Yours truly,
CEMENT MACHINERY MFG. CO.,
Per J. W. Sanderson.

Strongly Favors Facing.

DENVER, COLO., December 2.—We have pleasure in giving you what information we can relative to the practicability of facing concrete blocks with a richer material than that composing the body of the block. We have spent a great deal of time and money in experiments looking to a correct solution of this problem, and, during the four months which the writer spent in charge of our demonstration plant at the World's Fair in St. Louis, he was rewarded by the opinions of very many architects, engineers, builders and expert cement men, who, upon witnessing our method of facing immediately expressed themselves as being convinced that a hard, dense, impervious, beautiful and absolutely durable face upon cement or concrete work, could be made.

To begin with, it is impossible to put a satisfactory face upon a concrete block which is moulded with the face upon the side of the mould, as this necessitates the insertion of a partition, causing a distinct line of cleavage between the face and the body of the block, and also makes it impossible to secure a uniform pressure on the face, the pressure necessarily being applied sideways. Under our system all blocks are pressed with the face up. We first shovel into an iron mould a coarse and very wet mixture of true concrete, using material up to an inch screen. Before pressing this concrete we use a gauge, raking out a quarter of an inch (or more if desired) leaving a very coarse, rough and uneven surface. We then throw on a shovelful of fine mixture, of such texture and color as desired (usually a 1 to 2 or 1 to 3 mixture), which is struck off level, the pressing plate (either smooth, rock face, corrugated, bevel edge or any other design) is applied, the mould run into the press and given a pressure of 60,000 pounds with our hand press, or 75,000 pounds with our power press. You will readily see that this enormous pressure being applied on the face of the block mashes the face matter into the coarse concrete, forming a permanent and everlasting bond between the face and the body of the block. Also this pressure being absolutely uniform gives you a uniform density throughout the face and the hair checks and crazing cracks, which appear in any trowel face, are entirely eliminated. As you are doubtless aware the hair checks and crazing cracks result from troweling and the consequent drawing of the cement to the surface, which is something that does not occur under a heavy and instantaneous pressure.

I should also say while the body of our block is made very wet, the fine face matter is applied comparatively dry, there being a sufficient amount of moisture in the body of the block to flush through under pressure and thoroughly wet the face matter.

So much for the theory of facing. Now from a practical standpoint. We have a very large number of plants in successful operation throughout the country, and are placing more all the time. Our face blocks have been used in a large number of buildings, including cottages, store buildings, banks, residences, factories, hotels and public buildings. We have yet to hear of a single case where the facing has ever cracked off or shown any tendency to separation from the body of the

block. We therefore feel that the practical results are fully in accord with the theory of our system.

We trust the above information serves your purpose.
Yours truly,

THE AMERICAN HYDRAULIC STONE CO.,
H. H. Rice, Secretary.

The Increase of Moisture Resistance.

COLUMBUS, OHIO, December 31.—The practice of facing concrete blocks with a richer material is coming into continually more extensive use, and it is probable that in time it will be universally followed.

It has three marked advantages over the old practice of using a single cement and sand mixture for the entire block. In the first place, it increases the moisture resisting qualities of the block, second, it improves its appearance and, third, it lessens its cost of manufacture. When such a facing is employed, gravel, broken stone and the like can be advantageously used in making the body of the block and in some sections, this is a matter of considerable importance.

The rosy future that has been predicted for concrete blocks will not be assured until builders are convinced that a concrete block wall is at least equal to a brick wall in the matter of resisting the passage of moisture. A sale of a big lot of concrete blocks was recently prevented because the prospective purchaser insisted upon pouring a small tumbler full of water upon one of the blocks and noted that some of the water was absorbed. Every builder is acquainted with the readiness with which brick will absorb water, but concrete blocks are a new thing and will not be tested by builders in a particular friendly spirit until the blocks have been more thoroughly tested in actual use.

Anything which increases the moisture-resisting qualities of concrete blocks, adds materially to their value and a facing of rich material certainly improves the blocks in this respect.

One thing which is conducive to the use of a rich facing in the manufacture of building blocks, is the fact that blocks with such facings can be conveniently made on any of the machines now in use either with no alterations whatever or only such as can be made by any mechanic at very slight expense.

BLAKESLEE CONCRETE BLOCK AND MACHINE CO.

Depends Largely on the Machine.

BROOKLYN, N. Y., December 31.—The best way to cover up a cheap block, to prevent porosity and a continual appearance of being damp and gloomy, is to make the face mix of natural ground stone dust and the best Portland cement. Four buildings have been erected in Brooklyn, and their appearance is that of Indiana lime stone, a great quantity being used in this city. Only an expert can detect our buildings not being actual stone. The skill of men in doing this, soon cheapens the cost, so that only a few barrels of cement of extra grade are used at extra cost. The manipulation of slides and partitions is a nuisance, and worse than all, a sheet iron slide which separates the two varieties of mix to be pulled up each time creates a line of cleavage, which allows the facing to come off, and show a crack. To avoid this don't use any attachment but put a little extra cost in the front mix of the block and tamp the material so that the end of a block will look like chocolate cake—all welded together. There is no other way to make good product, if of a different material, in facing. It is a well known fact that cements of a poor grade, and those of the best grade, do not combine chemically, and to use them the line of cleavage must not be a straight line.

The extra cost of using face mix more liberally as described is better than fussing to put a face mix of half an inch on top of a twelve-inch block. The face mix must be liberal, otherwise the stain from cheap inside stuff will work out.

Face mix must not be fine ochre or other similar painting material, because in tamping the juice will tamp in streaks and outside of the block there will be as many shades as in Joseph's coat—no two hues alike. There is a building here in Brooklyn not made with our machine, where the contractor had a hoghead of brown ochre and used it in the brown stone blocks, and it was not a success.

We have in our yard several blocks made two years ago of a facing of one barrel P. C., two bar-

rels of ground granite dust, and four of bank sand. That block is the jewel of our collection. Two winters' storms and two summers of hot sun have not changed it, and in all weathers—damp, rain or shine—it is the same color. If wet, or moist it is all of same shade, and does not look wet, even if so.

To sum up my personal experience, I advise use of fine stone dust, with such color of stone as is desired, or practical, with Portland cement at \$2.00 a barrel and fine stone dust worth \$1.00 a barrel, in this new art of making a building look and act like stone cut out of the quarry. I have known of a building made with our machine in Philadelphia in this manner, where, to bring out the stone itself, the face cement was cut out with a wash of acid, so as to bring out all of the stone leaving the cement behind, out of sight.

The natural affinity between ground stone dust and high grade Portland cements must be considered and two barrels of ground stone dust and one barrel of cement, will put a stone face on a cheap grade of interior material. But to do this the machine must be favorable and work mechanically exact, and not depend on rocking, turning, or pulling, or any kind of zig-zag manipulation. Our machine has the record on four buildings erected here in Brooklyn. A cement expert, not favorable to hollow cement blocks, saw our machine at work. He said: "It is simplicity itself in its work." All you see is an open box closed on four sides. Fill and tamp, then strike off, and the machine pulls out the core, opens the press, and *Presto*—the block is up; all done speedily and exact.

NOYES F. PALMER MFG. CO.

Economy and Beauty.

MT. GILEAD, OHIO, December 31.—First, it gives beauty to a block, if the facing is of fine, sharp sand, mixed one part cement and four parts sand it produces almost a natural stone appearance, so close that it is often mistaken for natural stone. By placing this facing $\frac{1}{4}$ in. thick, then adding coarser material in back, a less quantity of cement can be used and obtain a strong durable block, and made in proportions as above stated for facing, and for a backing one of cement, two of sand and three or four of crushed stone, makes the finest kind of a block and as cheap as any person should ask for any building material. I find, too, in facing, by using a mineral color that I can represent a handsome colored stone at a very slight expense, making the body of concrete, coarse and strong, and then again by using marble chips mixed in proportions of one of cement and three of marble chips as a facing for smooth work, and when after seven days old they can be polished, and in appearance is as handsome as any marble, and while the crushing strength is equally as strong as marble. This can be applied to wainscoting, to tiling for floors and for around mantels and in bath rooms where a fine polish face is needed, for large slabs like desk tops for offices, a beautiful face material can be made of this material if it is condensed and thoroughly united with the body or inner portion of the block.

I have just completed stone for a handsome two-story dwelling in this city, and the blocks were all made as experimental work, testing my machinery, and I faced a large number of them, and in testing the strength I found this, that where the facing was made richer and of a finer quality its strength to the coarser and inner portion, forming a very close crushing strength between the two, while if the block had been made all the way through of the fine sand of the same proportions of cement as the back it would not have stood near the crushing strain. I would have had to use more cement to have gotten the same strength. This does not appear so nicely on rough or rock face work but where smooth work is required, then a fine facing is much the more handsome, and then again the absorption is less with a richer material at the face than at the back, but the two must be thoroughly united or they will scale or break loose from the inner body as the richer cement sets quicker than it does when mixed in less proportions, and I find, too, that in mixing they should be almost of the same consistency; if the back is wetter than the face it causes a loosening, and if the face is wetter than the back it often sticks to the molds and will pull loose from the backing when the mold is removed. My system is particularly adapted for convenient facing as the molds are placed upon the material after it is in the molding box, and then

with a small quantity of material it can be quickly scattered over the face or stroked with a square board or something that will give it an even cutting, and then when the pressure is applied the fine smooth facing is more readily forced into the crevices or places and designs that are to be copied or reproduced, and if very fine art work is necessary the fine facing fills so evenly and true that it is to a great advantage over a coarser material, and generally where a faced block is offered to a purchaser it sells for more money than it would made of the same material all the way through.

I have understood your questions right, I can only add that were I manufacturing concrete blocks I would endeavor to face all material that is exposed to the weather or to the eye. I only quote this from my own experience and in my own system with which I have had a number of years as a trial. Yours respectfully,

FISHER HYDRAULIC STONE SYSTEM.

A Matter of Little Value.

WASHINGTON, D. C., January 1, 1905.—We do not consider facing blocks with a richer material of much value in general construction; the object to be accomplished in most cases is to decrease the porosity of the stone; this should not be done with a greater proportion of cement on the face; even one to one on the face of the usual thickness will not prevent the moisture from going through unless the proper grades of sand are used and when the proper sand is used with one to four of cement there is no need of facing; the question of cost and quality comes in right here; taking a given quantity of cement required for a first class block and then robbing the back side of a portion of this in order to put it on the face for another purpose is not economy nor does it make a better block; we have sacrificed strength in the whole block for density in the face, which has not accomplished the desired result; if we use the quantity first taken of cement for the block, and then add enough more to increase the density of the face the cost is increased, but have we accomplished anything more than we would have done by proper grading of sand; in this last case no extra expense is incurred but cement is the largest part of cost in making stone. Now to prevent moisture from getting through the wall calls for mechanical construction of the most approved kind rather than adding a larger proportion of cement than is necessary for strength; take for instance, a wall ten inches in thickness of solid concrete and if the walls were made of coarse sand and cement one to four they would wet clear through; to stop this we must put the hollow in the wall; but what about the partitions which must run across the hollow space in the block; if they are too thick they will allow the moisture to follow through, and if they are too thin the blocks will split in handling and be ruined; it has been demonstrated that a ten-inch wall with an air space of four and one-quarter inches, with the partitions not over one and three-fourth inches thick, will in most cases prevent moisture from going through the wall provided the sands are properly graded; it is necessary also that the partitions at the ends of the block set back in order to prevent a continuous joint when the blocks come together; this is simply to show the mechanical construction has much to do with these questions which are now so fast coming before the people; of course blocks with partitions of greater thickness have and are being made all over the country and buildings have been erected with them, to the sorrow of the owners, and the cry is what can we put on the face of cement blocks to stop the moisture from going through; if properly constructed machines made the blocks, and the right sand, with the right amount of cement and properly cured these questions would not arise in this connection; the coloring of the face of blocks calls for discussion in another direction, and much more can be said about this than at present I have the time to give to the subject.

H. S. PALMER.

Phil Schaller, of Sac City, Iowa, writes that he has not worked his plant this winter, having a good stock already on hand. Mr. Schaller thinks artificial stone the coming building material. He says that there is no clay for brick or stone in his country, but plenty of sand along the streams which can be used in the manufacture of the artificial stone. He adds that all who have used the artificial stone he has made have expressed satisfaction.

More About the Cincinnati Meeting.

Treatment of Lime After Hydration.

SYRACUSE, N. Y., December 17.—Replying to yours of the 15th, I have already expressed myself in a previous letter for the masterly way in which you handled the report of our meeting. You are certainly to be congratulated on the published report, as it is very complete.

Complying with your request, you will remember No. 7 on the program read, "Treatment of Lime after Hydration."



W. K. SQUIER, SYRACUSE, N. Y., PRESIDENT NATIONAL ASSOCIATION OF MANUFACTURERS OF SAND-LIME PRODUCTS.



H. O. DUERR, SECRETARY NATIONAL ASSOCIATION OF MANUFACTURERS OF SAND-LIME PRODUCTS.

As most of you know, my practical experience in the manufacture of sandstone brick is limited and confined to a few months real work, although I have spent over two years in endeavoring to ascertain what others are doing and obtain all the data available, and my ideas may be materially modified as we progress in the art of manufacturing this product. Profiting by what experience has taught us in the handling of lime for our plaster business, we would, assuming the lime is hydrated (no matter by what process) pass it through a grinder, then to a bolter and to a bid to be drawn from as required. The tailings could be accumulated in a reasonable quantity and mixed with the fresh lime, as it is hydrated; when this comes through the

second time, the remaining tailing we would throw away. We would also provide a proper screen, so that no large pieces of stone or any foreign matter, such as nuts, bolts, etc., could enter the grinder. The best device that we can suggest as a protection to a machine of this kind is a magnetic separator. We have them in use and they will catch anything from a tack to a fair sized monkey wrench. While they are somewhat expensive, they are efficient and always "onto their job," which can not be said of the average workman. We are well aware that in some places a grinder is eliminated and this can be done. A large double reel and coarse mesh on the inside to catch core or lumps, without dropping them onto the bolt screen proper, works admirably, in several places, as we know. However, the percentage of tailings is, we think, increased. So much depends upon the lime that what we have threshed out in our way may not be applicable to many who are working under different conditions and with different limes. Yours truly,

W. K. SQUIER.

Sand Drying.

LOUISVILLE, Ky., December 27.—Referring to the discussion of sand drying, kinds of driers, etc., opened by Mr. P. L. Simpson and participated in by other gentlemen present at the organization of the National Association of Manufacturers of Sand-Lime Products, in Cincinnati on the 5th inst., permit me to say that they evidently are not aware of the fact that there are on the market rotary direct heat driers that will dry all grades of sand in the most economical manner, discharging the dried material free from the products of combustion, smoke, etc.

Where the purposes for which the sand is to be used require the drying to be done with a lower temperature than that of the average direct heat drier. We also manufacture rotary steam driers with which exhaust steam can be utilized and which dry sand to the best possible advantage.

THE BILES DRIER CO.,
Louisville, Ky.

Difference of Opinion.

We have received several letters discussing points brought up in the meeting of the Sand-Lime Products' Association. In some of these our attention has been called to the statements with reference to plants built along independent lines. We are informed for the benefit of the public by those who have a right to know what they are talking about, that every plant constructed along these lines has cost more before it was in successful operation, than it would have had one firm with experience taken the entire contract guaranteeing the plant. The experience of these machinery and construction firms has cost them good money. Our correspondents believe that it is cheaper to buy a plant where this experience is thrown in with the contract, than it is to acquire the knowledge by costly experiments.

They further suggest that none of the so-called independent plan of plants have been in operation long enough to prove any thing and that one of those mentioned is not even built as yet so actual cost can not be known, and that according to Mr. Duerr's statement the Wilmington, Del., plant was not a cheap one by any means.

Has Confidence in Sand-Lime Brick.

MIDDLESBORO, Ky., December 31.—The Middlesboro Pressed Brick Co., of this city, which was organized about a year ago with a capital stock of \$20,000.00 is preparing to double its capacity during the coming year. This company manufactures a dry pressed brick and have fire clay mines in their immediate locality, which they have every reason to believe will prove most profitable. Mr. J. F. Harkness, the president and general manager, said that the capacity of the plant would be increased about January 1 from 10,000 to 20,000 brick per day. This company use the Atlas brick machine and Stedman crusher. They also have a mine of valuable white sand which at some future date they hope to convert into sand-lime brick. Mr. Harkness gave as his reason for not doing so at the present time his failure to find the proper machine for the manufacture of these brick. He believed, however, that a machine with the necessary improvements would be made within the near future, at which time he would enter largely into the sand-lime brick industry. He has great faith in the future of this brick and is confident that their popularity and usefulness will be only a question of time.

In the Iron City of the South.

BIRMINGHAM, ALA., December 18.—Back over the hills behind the park on the Southern railroad there is located a plant which has excited the interest of every builder and contractor in the vicinity of this prosperous city. In this land of red clays a white brick was a very expensive luxury, and consequently a rarity until a few hustling and enterprising business men made a careful investigation of the sand-lime brick business, and as a result built a plant for their manufacture so that to-day the builders and architects of the city are having their wants supplied, and light brick buildings are becoming very popular.

The enterprising men who started this industry here, H. A. Stockmar, president; Jos. J. Beranger, vice president, and T. C. Buckshaw, secretary-treasurer and general manager, have the right idea about things since they put their plant on a good railroad line and in the edge of a prosperous and rapidly growing city. They, realizing that the business was bound to grow rapidly, put up all their buildings and equipment with power sufficient to double their capacity with the addition of but little more of the Schwarz machinery. In the light of the large demand for their output since starting it is probable that at no very late date this will be done.

These people believe in making only the best possible product, and say if through any accident a poor brick were made they would throw them over the dump rather than sell them, since they believe some improperly made sand-lime brick have been put on the market to the detriment of the whole industry, and they do not wish to be a party to anything of that sort.

The plant has been in operation since May, 1904, and have many buildings in Birmingham as an evidence of the quality and beauty of their product. They have also shipped their brick as much as 400 miles from Birmingham. Eight cars in one order, according to the contractor's report, arrived with almost no breakage or damage to the edges, much to his surprise.

This firm after purchasing the right to use several patents, on investigation, decided that the Schwarz system looked best to them, and they have not changed their mind about it since installation. They have in use one Schwarz press and one semisteel press.

The location was selected with a view to quality of product as well as economy of manufacture. The sand comes from a soft sand rock in the hill back of the plant, but adjacent to it. The natural conditions are such that this rock comes to the plant by gravity and is dumped into the crusher, after which it goes through a set of rolls and is finished to the desired size by a Williams pulverizer, all by gravity. It is then elevated to the cars for use or to storage bins as is desired. The lime comes in from the cars and on a level is placed in the storage bins, from which it is readily removed for grinding as is needed. This being done by a coffee mill grinder and a set of emery burrs, after which it is elevated to bins convenient to the place where the lime and sand are fed to the Schwarz mixing apparatus, which is ample for the capacity of the two presses, which are rated for about 9,000 per day. The superintendent says on a month's run they do not expect to get out the full daily capacity of the presses as there are always unavoidable delays. The mixer is over the presses and drops into a hopper which feeds to either or both presses by gravity.

From the press the brick are loaded direct to the cars, which, by a turn table, are rolled into the cylinders. Two cylinders are in use. One about 40 feet long, with a copper gosket and the other about 66 feet long with an asbestos-graphite gosket. The latter gosket is best liked.

From the hardening cylinders, which are directly behind the tubular boiler, which supplies the steam, the cars loaded with brick go to the yard or car for shipment by a gentle fall in the track so as to require very little labor in moving them. The buildings are all substantial and roomy—being of frame construction with flat composition roofs. While the plant can now be operated with economy a doubling of the capacity will materially reduce the cost of production. The sand is of excellent quality for other purposes, and arrangements have been made and the capacity of the crushers and reducing machinery is such that

sand shipments can and are being made for other uses. The supply of sand is inexhaustible.

The firm is known as the Birmingham Sand-Lime Brick and Stone Manufacturing Co., and have offices at room 706 Title Guarantee Building.

We append a postscript from one of their recent letters to us which indicates their attitude toward association:

P. S.—We admire your enterprise in reporting the convention of Sand-Lime Brick Manufacturers at Cincinnati on the 5th inst. We had intended to be there, but pressing matters kept us from being present. We are in sympathy with that organization and shall become a member and will work with the others in building up a successful and lasting trade in our particular line, and we feel that we have a strong ally in Rock Products.

Hardening Cylinders for Sand-Lime Bricks.

BY HENRY G. MORRIS, 333 WALNUT STREET, PHILADELPHIA, PA.

In an effort to establish a standard of construction of hardening cylinders for sand-lime bricks, which would meet the requirements of the boiler insurance companies, an investigation of the practice of the various builders of such cylinders, led to the conclusion that proper consideration had not been given to the conditions existing in the use of such apparatus.

In general terms, the requirement is for a cylinder of 6 feet diameter, from 48 to 60 feet long, with one end closed by a flanged head which can be opened in the most convenient manner once or twice a day.

The cylinders to be subjected to a working steam pressure of 125 pounds per square inch.

The joint being made by a packing ring in a recess in one of the flanges at about 37½ inches from center of cylinder, thus exposing a surface of 4,418 square inches, and the pressure against the head would therefore be equal to 552,250 pounds.

It has been customary to use a packing ring of copper, ¾ inch diameter, but it has been found preferable to use a form of asbestos packing, most conveniently two rings of ½ inch square section.

To withstand this pressure would call for 56 bolts, upon each of which a strain of 10,000 pounds might be brought, and assuming a factor of safety of six, each bolt should have an ultimate strength of 60,000 pounds.

In order to avoid the uncertainties of material involved in the use of flanges of either cast iron or cast steel, it was decided to adopt rolled steel flanges produced from a solid ingot, rolled to the required form, drilled and slotted for the swing bolts, and recessed for the packing ring.

A careful analysis of the possible strains that would be brought on these flanges, shows that the strength is far in excess of the requirement under conditions likely to exist.

In order to allow room between the bolts for application of wrench, it was found that 56 bolts of 1½ inch diameter were as many as could be conveniently used, and they were therefore drop forged of steel, showing a tensile strength of over 60,000 pounds, care being taken to form the heads so that they would have a fair bearing against the back of the flange.

The shells of cylinders are of course required to conform to established rules for such structures as demanded by the A. B. M. A., but in order to avoid the fatal accidents that have already occurred in the use of hardening cylinders, when first cost has overcome considerations of safety, it has been the effort of the Schwarz System Brick Co. to provide as far as possible against accident, and to furnish apparatus that would pass the most rigid inspection of any insurance company.

Orders Nearly Swamped Them.

BUFFALO, N. Y., January 4.—The Buffalo Concrete Stone Co. write us: "Our business has exceeded our expectations for the past year. Orders come in faster than we can fill them, and this without any advertising on our part. Not but what we realize that it pays well to advertise; but the demand for our building material was so great, had we advertised we would have been swamped in our endeavor to fill the orders. In carrying out the good resolutions for this year we find it necessary to subscribe to your valuable paper, Rock Products."

Erected From Their Own Product.

We herewith reproduce a picture of the office front of the Tennessee Granite Brick Co., on Second Street, Memphis, Tenn. This is erected with some of the company's own granite brick, and makes a very attractive appearance, as well as an advertisement for their product.

Wm. Boyd, of Benndji, Minn., is organizing a company for the manufacture of concrete blocks.

The Camden Granite Co., of Camden, N. J., has been organized with a capital stock of \$125,000.00. The incorporators are: Robert A. Rockhille, Lewis K. Ewing, Edward R. Bell and John H. Bell.

The American Cement Construction Co., of Milwaukee, Wis., has been organized with a capital stock of \$10,000.00. F. D. Quin, F. J. Weckmueller and Fred J. Rodée are the incorporators.

The DeWitt Hollow Wall and Concrete Co. has been organized at Lincoln, Neb., with a capital stock of \$5,000.00. C. H. Buck, W. Sperling and W. G. Springer are the incorporators.

The Western Hollow Brick Co. has been incorporated at Bartlesville, I. T., with capital stock of \$200,000.00. The incorporators are: J. J. Curl, Frank Buckner and Charles E. Hair.

The Cumberland Granite Brick Co., of Cumberland, Md., has been awarded a high distinction at the St. Louis Fair, for the excellence of its product.

The Chicago Hollow Wall and Concrete Co., of Chicago, Ill., has just been organized with a capital of \$60,000.00. The incorporators are: H. S. Duncombe, C. A. Teller and F. A. Gansberger. This company will manufacture building block.

D. M. Kennedy, C. F. Berry and others, of Detroit, Mich., are interested in the formation of a new company for the manufacture of sand-lime brick. Horace S. Smith has invented a machine which the company will use.

The Southern States Reinforced Concrete Co. has been organized at Atlanta, Ga., with a capital of \$1,000.00. The company will manufacture concrete. George B. Hinman, A. F. Walker and J. H. Mullin are the incorporators.

The Cojimar River Sand Co., of New York, has been organized for the manufacture of cement stone in Cuba. The capital stock is \$100,000.00 and the directors are: Austin Brainerd, of New York, Walter F. Styles, of Hartford, Conn., and J. B. Hull, of Havana, Cuba.

The Essex County Construction Co., of Newark, N. J., has just been organized for the manufacture of artificial stone and for building piers and wharves. The capital stock of the new company is \$125,000.00, all paid in. The incorporators are: James E. Crosseley, of East Orange, and George Benjamin and Henry L. Sellner.

Crumbo & Son, of New Albany, Ind., leading stone people of New Albany, are enjoying a continuance of the present year's prosperity. The recent addition to their plant of a concrete block machine has proved most helpful and they are figuring on some nice orders for block houses to be erected in the spring.

The New Jersey Cement Stone Co., of East Orange, N. J., has just been organized for the manufacture of a peculiar kind of building stone, being fire proof, water proof and frost proof. The company has purchased a large tract of land at Glenwood Place, and Glenwood Avenue, and is erecting a plant which will have a capacity of several hundred blocks per day. James Willis Pierson is president and M. DeForest Soverel, secretary.

The Eau Claire Concrete Co., of Eau Claire, Wis., has just been organized at the above place. The company recently purchased a tract of land and will shortly begin the erection of a plant. It is possible that the company will later embark in a general construction business and take contracts for constructing buildings as well as furnishing materials. It is expected that the new concern will give employment to about 150 men.

The Hotchkiss Concrete Stone Co., of Chicago, Ill., has just been incorporated in the Windy City. The officers are: E. S. Hotchkiss, president and manager; Wm. Peacock, secretary; C. C. Bartlett, treasurer. The general offices are at room 1109 Title and Trust Building, and the factory is located at Nineteenth and Lincoln Streets. The company has adopted the following motto: "Not how cheap but how good."

Plaster.

The National Plaster Manufacturers' Association.

Meets Semi-Annually.

H. E. DINGLEY, Syracuse, N. Y., President
A. H. LAUMAN, Pittsburg, Pa., First Vice President
L. G. POWELL, Toledo, Ohio, Second Vice President
JAS. LEENHOUTS, Grand Rapids, Mich., Third Vice President
ALEXANDER FORRESTER, Cleveland, Ohio, Treasurer
E. H. DEFEBAGH, Louisville, Ky., Secretary

Official Organ, ROCK PRODUCTS.

So Much for Good Advertising.

Under date of December 15, Mr. D. E. Binns, of Binns Stucco Retarder Co., of Uhricsville, Ohio, says: "We have now completed the new addition to our plant, which gives us 12,000 square feet of floor space, and have also installed a new 150 h. p. boiler, and the latest improved dustless machinery, which increases our capacity about one carload per day. Our business in 1904 has almost doubled that of 1903, and we credit a large part of this to our advertisements in ROCK PRODUCTS. Our inquiries from that source are almost daily. So much for good advertising."

Annual Meeting.

The National Plaster Manufacturers' Association will hold its annual meeting on February 6, at 1 o'clock, at the Hollenden Hotel, in Cleveland, Ohio. You should not miss it.

Grand Prize in Gypsum Display.

The United States Building Material Manufacturing Co., of Kansas City, Mo., was awarded a grand prize at the St. Louis World's Fair on its gypsum and rock plaster display. The excellence of the company's exhibit was the subject of general comment among the members of the trade who saw it. The officers of this concern are: W. A. Pickering, president; H. H. Beels, vice president and general superintendent; Geo. H. Kahlmann, vice president; M. F. Erba, treasurer and general manager; B. N. Simpson, secretary and attorney; R. S. Phillips, traffic manager, and W. J. Ong, general sales agent. The general offices are in the Guardian Trust Building, Kansas City. The company has also at Kansas City its sand-lime brick plant. Its dry kilns are at Sulphur Springs, Ark., and its cement plaster mill at Ferguson, O. T. It is capitalized at \$200,000.00, and is doing a big business.

Pennsylvania Plant Burned.

The plant of the Paragon Plaster Co., of Scranton, Pa., was destroyed by fire, supposed to be of incendiary origin, December 18. The loss was about \$15,000.00, of which \$12,000.00 was covered by insurance. Building plaster was manufactured. E. L. Merriman, general manager, says the plant will be rebuilt at once.

The American Fibre Plaster Co., of Cuba, N. Y., have purchased a sand bank at Walsworth Junction and will ship the sand to their plant from that point. C. A. Ackerly and G. D. Whipple are negotiating with the officials of the Pennsylvania railroad at Buffalo for the laying of a track to the bank.

The Production of Gypsum in 1903.

One chapter in the volume "Mineral Resources of the United States, 1903," which the United States Geological Survey will soon bring out, is entitled, "The Production of Gypsum in 1903." In this it will appear that the gypsum industry has made considerable advance during recent years. The total production for 1903 is given as 1,041,704 short tons, valued at \$3,792,943.00, as against 816,478 short tons, valued at \$2,089,341.00, which was the output for 1902. The production of gypsum is reported as crude gypsum, land plaster, plaster of Paris, and wall plaster, according to the condition in which the gypsum first reaches the market. The figure given as that of the total production is, therefore, an estimate arrived at by computing the whole output as crude gypsum. The total value given is that of the product in its different forms as it reaches the market.

The advance in the use of gypsum has resulted mainly from the increased use of gypsum wall plasters in modern buildings. Much of the gypsum sold as plaster of Paris is subsequently manufactured into wall plaster by local firms.

Gypsum to the value of \$467,597.00 was imported into the United States during 1903. It came chiefly from Nova Scotia and entered the ports of the New England and northern Atlantic States. A considerable amount has been received at San Francisco from Mexico in previous years, but none was imported from there in 1902 and 1903. The United States is the second country in the world in the production of gypsum, yielding precedence only to France. Canada is third, Great Britain fourth, and Germany fifth.

Valuable Plaster Deposits.

Favorable deposits of vast proportions have been discovered a few miles south of Middleton, Oklahoma, suitable for the manufacture of plaster. A company has recently been organized and a mill will be built giving employment to about sixty men. So extensive are the deposits that it is generally supposed that the field can not be exhausted within ten years. The same company which will operate this plant has six other mills in operation in various parts of the country.

Successful Wisconsin Plant.

OSHKOSH, WIS., December 30.—We recently had the pleasure of calling upon the Wisconsin Pulp-Plaster Co., of Oshkosh, and found a well equipped plant which has been in operation something less than a year. This plant is rather more substantial than it would have been had the building been put up for this purpose, but the company took advantage of the purchase of an old mill elevator property which gave them plenty of room and an exceptionally good building, but the office is a separate building in order that it might be removed from all the dust and dirt. They reported the plaster business good and constantly increasing in this territory.

Opened Operations Successfully.

The Binghamton Pulp Plaster Co., Binghamton, N. Y., is a new concern which was organized last July under the management of Mr. O. S. Heller. The new offices and factory building has just been completed, and the plant was successfully entered into operations, with a capacity of twenty-five tons of plaster a day. The wood pulp is made from small logs of basswood, poplar and hemlock, which is ground into a mealy substance by a system of saws, then elevated to the kiln located upon the roof of the building, where it is dried and where it is combined with cement and other ingredients, and finally packed in bags for shipment. The company is now working on a large order for Rochester contractors, delivering twenty carloads a day until the order is filled.

The company claims that their new plaster product is fireproof, it contains no lime, sand or hair, and can be sawed like a board. It makes a hard, elastic, fireproof and frostproof wall at an extremely low cost. It is also a nonconductor of electricity. Before the formation of the company very exhaustive tests were satisfactorily conducted, and the promoters of this new industry feel sure of success at the start of their venture.

The American Hard Wall Finish Co., of Knoxville, Tenn., has changed its name to the Knox Wood Fibre Plaster Mills.

The Acme Cement Plaster Co., Grand Rapids, Mich., will soon erect a plant for the manufacture of stucco.

The Cresceus plaster plant, of the Toledo Builders' Supply Co., Toledo, Ohio, was damaged by fire recently to the extent of \$1,500.00. The loss was covered by insurance.

The Fishback Plaster Co., of Toledo, Ohio, report that they have been unable to fill their orders during the past season. The plant has been found inadequate to meet the demands of the company and it is possible that the capacity will be increased.

A. E. Pillsbury, of Minneapolis, Minn., will erect a large stucco mill at Bridger, Mont., within a few months. The new plant will have a capacity of 100 tons a day. Over \$1,000,000.00 will be expended on the enterprise.

The Colorado Gypsum Co., of Denver, Col., has been incorporated with a capital stock of \$50,000.00. The officers are: W. H. Inman, president; C. H. Stewart, vice president; G. W. Henry, secretary; W. A. Lea, treasurer. The company owns 520 acres of gypsum deposit located in the mountains.

The United States Gypsum Co. is contemplating the erection of a branch railroad to connect its plants at Fletcherville and Marsh, Ohio. The plaster of the former plant is about exhausted and the mill is idle. With a railroad in operation the mill could be run to its full capacity.

The Buffalo Plaster and Supply Co., Buffalo, N. Y., has been incorporated with a capital stock of \$10,000.00, for the purpose of dealing in plaster and other building material. The directors are: James B. Carroll, Richard D. Jones, and William C. Carroll.

The Lansing Plaster Co., Lansing, Mich., has been organized with a capital stock of \$10,000.00. The officers are: H. M. Gardner, president; J. P. Sleight, vice president; C. H. King, secretary and treasurer; W. S. Griswold, superintendent and manager. The company will manufacture plaster from wood pulp.

Gilbert Witters, of Grand Rapids, Mich., is organizing a company to engage in the manufacture of plaster. The capital stock will be between \$80,000.00 and \$100,000.00. So far as we are informed the plant will be quite extensive and operations will begin within a few months. An option has been secured upon a large tract of property near Grand Rapids.

Dr. A. McKechnie, of Pittsburgh, Pa., and Dr. Taft, of Vick Park, Rochester, are at the head of an organization for the establishment of a plant at Wheatland, N. Y., for the manufacture of a patented wall plaster. Wood pulp will be used instead of sand. The plans for the plant are well under way, and when complete will cost about \$50,000.00. This is one of four similar plants controlled by this same company.

The Tennessee Wood Fiber Plaster Co. was recently organized at Knoxville, Tenn., and has begun operations. It has a capital stock of \$25,000.00 and is complete in every detail. The product is something new, being a plaster which can be mixed with water and is ready to apply to the walls. There is neither sand or hair used in its composition. It contains fiber made from sweet gum logs. This firm is composed of: W. L. Murphy, C. M. Cowan and J. P. Gaut.

A new company is being organized at Caledonia, N. Y., for the manufacture of a patent wood pulp wall plaster. The erection of the plant has begun and arrangements are under way which will make it one of the largest concerns of its kind in the State. The Wheatland Land Plaster Works, Wheatland, N. Y., will furnish the new company with the raw plaster. The cost of the new buildings and other improvements will be about \$50,000.00.

The New Albany Wall Plaster Co., a recent organization at New Albany, Ind., which had expected to begin operations about the first of the year have experienced some delays in securing material for their plant, and will be unable to begin as early as they expected. The delay will not be very material, however, and they are preparing to do a nice business when operations do begin.

Roofing.

The National Association Master Composition Roofers.

J. B. Ohlgschlager, Louisville, Ky. President
J. W. Moore, Providence, R. I. First Vice-President
Peter LeGoulan, Pittsburg, Pa. Second Vice-President
E. E. Locke, Indianapolis, Ind. Secretary and Treasurer

Official Organ Rock Products.

DIRECTORS.

E. S. Bortel, Philadelphia, Pa.
H. W. White, New Orleans, La.
C. B. Jameson, Buffalo, N. Y.

The Executive Board consists of the officers and directors.

Committee on Laws: E. F. Shaffer, Columbus, Ohio; A. B. Bartholomew, Memphis, Tenn.; C. A. Monks, Louisville, Ky.

THE OBJECT OF THE ASSOCIATION ARE:

To maintain an organization for the benefit of persons engaged in the business of Composition Roofing; to promote uniformity in the customs and usages of Composition Roofers; to inculcate principles of justice and equity in business; to acquire and disseminate among its members valuable information in reference to the manner and methods of doing work; to establish and secure the use of a superior quality of material and workmanship; to facilitate the speedy adjustment of business disputes; to aid and encourage the formation of local organizations, where practicable, and generally to secure to its members the benefits of co-operation in the furtherance of their legitimate pursuits.

Annual Convention.

The National Association of Master Composition Roofers will hold its fourteenth annual convention in Indianapolis, Ind., at the Claypool Hotel, on February 20 and 21. It is needless to urge a full attendance, as the members fully appreciate the necessity of such co-operation as these annual meetings insure to those engaged in furthering the needs of the association and its members.

Expressions from Philadelphia Roofing Firms

Harris & Harris—We have a great deal of work under contract, but the weather is interfering. The indications now are for a better season than last.

E. S. Bartel & Co.—We are busy and there seems to be plenty of work ahead. Of course this is the dull season in the roofing line but we have had a good year and expect a better one.

R. S. Cropper, Slate Roofing—We are closing up a good year's business and everybody seems to be satisfied. It is too early to say much about next year's business, but the general feeling is that business will be better.

Roofing Season Over.

CHICAGO, ILL., December 27.—At this season, with our usual climatic conditions, the roofing season is practically over as a rule, and this year is no exception. The entire trade is now inactive, notwithstanding the late autumn, business was very heavy and of the rush order type. While there was quite a good deal of building, both in the down town business property and in suburban residence property, they are practically all under safe cover to-day, and there are many roofers idle and will probably be so until spring. Notwithstanding this enforced idleness in winter, there is considerable demand for good, practical composition roofers in Chicago, and at the present time the

composition roofers are for the most part under the domination of union rule, which in this case is an iron clad one. As the result, not only high wages are paid, but the master composition roofer is limited in the things he can do, as well as to where and how he can work his men. Notwithstanding this the Chicago master roofer has made some money during the last season and all take a very bright view of the future, basing their opinion on the many prospective building projects for next year. While many have been made public, there are others still in the embryo state, and will probably bud forth in the near future.

The stock of roofing material in the warehouses is naturally low at the present time, but most of the larger dealers in this material are beginning already to replenish their stock for spring business. The tendency in roofing seems to be to put on much better roofs, and more expensive roofs so far as first cost is concerned, especially on the higher class of building. The builder is looking more to durability and efficiency of the roof than he is to the cost. The roof which does not need repairs for years is sure to be a money saver. Their larger buildings have been covered with three or four coats of felt, and from one or two layers of gravel properly imbedded in asphalt, and the parties who have laid these roofs claim they are good for forty or fifty years.

Many of the master roofers claim that while they are paying the highest wages, much of the labor which is furnished them by the unions is inefficient, that is, they do not have sufficient training or skill in this particular line of work to make them speedy and valuable workmen in this line. On the whole the outlook for the master roofer in Chicago for the season of 1905 is very bright.

Roofing Tile of Cement.

NASHVILLE, TENN., December 19.—The New Era Cement Roofing and Stone Co., composed of H. Hardison and C. T. Benedict, has just completed the erection of its plant here for the manufacture of a roofing tile made of cement. They have a large and modern plant, employing about twenty men. The exclusive right has been secured by the company from the Furman Construction Co., Detroit, Mich., for the use of the steel dies, steel plates and other devices used in the manufacture of this roofing tiling in Davidson County. A. J. Steber, of Detroit, a skilled expert in this particular line, has been secured as superintending foreman. These tiles are double interlocking, which constitutes one of the valuable features of the patent, as when they are placed upon the roof they fit very closely, one covering the other. A roof constructed of these tiles will withstand any ordinary weight and grow harder with age. It only requires a few hours to place a roof on a building, which must add to their popularity. The company is anticipating a large business just as soon as these tiles become more widely known.

The Union Roofing and Manufacturing Co., Minneapolis, Minn., has filed a certificate increasing its capital stock from \$50,000.00 to \$100,000.00.

The Dayton Felt Roofing Co., Dayton, Ohio, has secured a large railroad contract in Indianapolis, Ind., which will require a carload of material.

The Central Ohio Roofing, Tile and Brick Co., Columbus, Ohio, has been incorporated with a capital stock of \$30,000.00 by: W. B. Worcester, U. J. Worcester, A. V. Bleninger, William M. Jones and R. T. Jones.

The Barr & Mills Co., of Zanesville, Ohio, have opened an office in New York City. They are large dealers in roofing slate and lumber, and the rapid growth of their business during the past year has necessitated the opening of an Eastern office.

The Lewis Roofing Co., of Moline, Ill., are at present erecting three large buildings. The rapid growth of their business during the past year is responsible for these improvements. The buildings will be as follows: one 100x100, one 140x50 and the other 50x32. These will be completed as soon as possible.

The Wheeler Roofing and Cornice Co., Wheeling, W. Va., have increased their capital stock from \$200,000.00 to \$1,000,000.00. This company is considering the proposition to move their offices to Steelton, and the directors have been empowered to make such a change. The stockholders have expressed themselves as being highly gratified with the admirable management of the company's affairs by Secretary G. C. Jansen.

Slate.

An Amicable Settlement.

A conference of the Granville, N. Y., and Pennsylvania slate manufacturers was held in Granville recently to arrange the matter of prices. It appears that the Pennsylvania manufacturers had cut the price on ribbon slate after an agreement to sell their output at a uniform price. The meeting was satisfactory in every way, and the Pennsylvania delegation promised to put the price of ribbon slate back to the original figure on January 1.

Reason for the Decline.

The increasing popularity of newly invented roofing materials has had a tendency, during late years, to deteriorate the usefulness and value of slate for this purpose. The fact that gravel, cement, tile and other materials are entering so largely into this field, makes the battle for roofing slate one of serious proportions.

It can not be said, at least in a broad sense, that slate as a roofing material has had its day, for many buildings are still being covered by slate. There are a large number of people who still retain their preference for this style of roofing, and it will always retain a certain amount of popularity.

Another reason for its decline is the fact that the schools have practically dispensed with slates for the pupils' use. The tablet has usurped their place, and when formerly the thousands of children carried their slates, as a necessary adjunct to their books, with few exceptions it has now been forever relegated to the attic or some other sequestered spot. There are, however, large amounts of slate being quarried in a number of States. New York and Pennsylvania are the largest producers, and the industry is consequently very much alive. In these states a uniform price is being maintained and the business, taken as a whole, is in many ways satisfactory.

C. H. Chapman will open a slate quarry near Charlotte, Vt., in the very near future. According to reports a rich black vein is there in abundance.

The Natural Slate Manufacturing Co., Mena, Ark., has recently been incorporated with a capital stock of \$500,000.00; \$300,000.00 of which has been subscribed. Wm. H. Moser, president; Clarence C. Nash, secretary and treasurer; Geo. H. Steen, assistant treasurer and general manager.

The Mutual Slate Co., of Newark, N. J., is the name of a new organization which has just been incorporated to quarry, acquire and deal in slate, granite, etc. The capital stock of the new company is \$50,000.00. The incorporators are: Gustave W. Roeber, William S. Walters, and Charles E. Van Syckle, all of Newark, N. J.

The Asbestos Shingle, Slate and Sheathing Co., Norriston, Pa., has been incorporated with a capital stock of \$2,000,000.00, 10 per cent. of which has been paid, by a number of parties from Ambler, Pa.

The Vermont Unfading Green Slate Co., of Fair Haven, Vt., which recently purchased the property of the Vermont Clock Co., has taken possession of the plant and will equip the mill building with the latest machinery.

The Champlain Valley Slate Co., Charlotte, Vt., is the name of a company that discovered a rich vein of unfading black slate within a mile of Charlotte station. The company has been successful in securing the services of J. Spencer Roberts, of Granville, N. Y., as manager. They are laying a foundation for a large boiler house, and will equip the quarry with new machinery. They have made from the waste slate the finest of pressed brick and it is only a matter of a short time when new machinery for the brick plant will be installed.

For the Retailer.

The National Builders' Supply Association.

Meets Semi-Annually.

OFFICERS:

JOHN A. KLING	President.
Cleveland Builders' Supply Co., Cleveland, O.	
JAMES G. LINCOLN	Vice President.
Waldo Bros., Boston, Mass.	
W. S. HUMBERT	Vice President.
W. S. Humbert, Inc., Buffalo, N. Y.	
AMBROSE TOMKINS	Vice President.
Tomkins Bros., Newark, N. J.	
ADDISON H. CLARKE	Vice President.
Wm. Wirt Clarke & Son, Baltimore, Md.	
S. D. LINCOLN	Vice President.
National Mortar Co., Washington, D. C.	
WALTER T. BRADLEY	Vice President.
Walter T. Bradley Co., Philadelphia, Pa.	
R. W. MARSHALL	Vice President.
Wheeling Wall Plaster Co., Wheeling, W. Va.	
C. E. McCAMMON	Vice President.
L. H. McCammon Bros., Cincinnati, O.	
E. E. EVANS	Vice President.
Boutell Bros. & Co., Bay City, Mich.	
E. M. BATES	Vice President.
E. M. Bates & Co., Ft. Wayne, Ind.	
OWEN TYLER	Vice President.
Louisville, Ky.	
G. J. PARKE	Vice President.
V. H. Parke & Son Co., Decatur, Ill.	
C. P. PLATLEY	Vice President.
Flatley Bros. & Co., Green Bay, Wis.	
GORDON WILLIS	Vice President.
Hunkins-Willis Lime & Cement Co., St. Louis, Mo.	
J. N. THAYER	Treasurer.
O. C. Thayer & Son, Erie, Pa.	
RICHARD KIND	Secretary.
Toledo, Ohio.	
HARRY S. WEST	Assistant Secretary.
Toledo, Ohio.	

EXECUTIVE COMMITTEE:

JOHN A. KLING, Chairman	Cleveland, Ohio.
D. J. KENNEDY, D. J. Kennedy Co.	Pittsburg, Pa.
C. W. S. COBB, Glencoe Lime & Cement Co.	St. Louis, Mo.
A. B. MEYER, A. B. Meyer & Co.	Indianapolis, Ind.
C. H. LITTLE, C. H. Little Co.	Detroit, Mich.
F. S. WRIGHT, Meacham & Wright	Chicago, Ill.
RICHARD KIND, Toledo Builders' Supply Co.	Toledo, O.

Official Organ, ROCK PRODUCTS.

Annual Meeting.

The National Builders' Supply Association will hold its annual meeting in Cleveland, Ohio, at the Hollenden Hotel on February 6, 7 and 8. This is the sixth annual meeting of the association, and promises to be a record-breaker in point of attendance, as it has been widely advertised and general interest has been aroused. Nobody who can get there should fail to go. Subjects of great interest to the trade will be discussed by the best authorities and the meeting is sure to result in much good to those who attend. An elaborate programme has been prepared including many pleasant features. It is given in full as follows:

Tuesday, February 7th, 1905, Morning Session.

9:00 a. m.—Convention assembled in Palm Room, Hollenden Hotel—Address of welcome on behalf of city by Hon. Tom Johnson, Mayor. Address of welcome on behalf of Building Interests, by Mr. W. B. McAllister, President Cleveland Builders' Exchange.

Executive Session—Active Members.

At this meeting general routine will be taken up as provided for in by-laws.

Response by President Kling.

12:00 noon—Adjournment until 2:00 p. m.

2:00 p. m.—Continuation of morning session—Active Members.

8:00 p. m.—Theater party for manufacturers, their representative delegates and their ladies at Keith's, by courtesy of Local Entertainment Committee.



WAREHOUSE WESTERN LIME AND CEMENT CO., MILWAUKEE, WIS.

Wednesday, February 8th, 1905, Morning Session.

9:00 a. m.—General meeting of manufacturers and dealers in Convention Hall.

President's Address.

Address on Concrete Construction, by Mr. Chas. A. Matcham, of Lehigh Portland Cement Co.

Address on Sewer Pipe, by J. M. McClave, of American Sewer Pipe Co.

Address on Cement Roofing and Floor Tile, by Mr. Charles Roe, of Furman Construction Co.

Adjourn until 2 p. m.

At 2 p. m. a trolley ride for the ladies has been arranged, the route being along Euclid Avenue and through the best residence section of the city. It will end at the Colonial Club, where luncheon will be served.

2:00 p. m.—Address, "The Salesman," by C. L. Johnson, of Castalia Portland Cement Co.

Address, "Common Lime, Its Uses and Abuses," by Peter Martin, president of the Tri-State Supply Co.

Address, "The Association of Business Men," by W. F. Saunders, secretary Business Men's League, St. Louis, Mo.

Adjourn to 8 p. m.

8:00 p. m.—"Get Together" Smoker at the Hollenden, promoting friendship between manufacturers and dealers.

Cards and other entertainment for the ladies (with prizes).

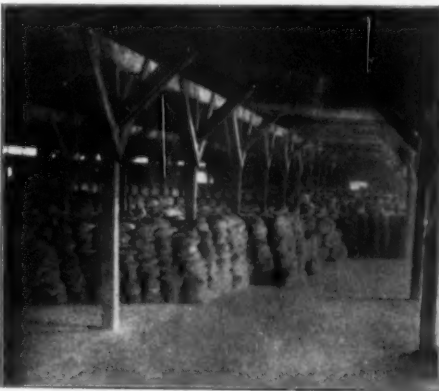
Thursday, February 9th, 1905, Morning Session.

9:00 a. m.—Active members will meet for the transaction of any unfinished or new business.

2:00 p. m.—Trolley or sleigh ride for manufacturers, their representative delegates and their ladies.

A Bag Man's Troubles.

On a recent visit to one of the warehouses of the Western Lime and Cement Co., First Avenue and Dock Streets, Milwaukee, Wis., Superintendent Brown for that warehouse, made some very forcible remarks about the bag question, and they struck us as being suggestive of some good ideas. This warehouse is capable of storing about 3,500 tons at one time, and is 80x300 feet with dock facilities. Some idea of the number of bags handled by this firm may be obtained by statement made by Mr. Brown, which was that in one week he had shipped from that warehouse \$12,000.00 worth of empty bags, so you see while Mr. Brown's troubles are not as large as the cement factory man's, they are not



WAREHOUSE WESTERN LIME AND CEMENT CO., MILWAUKEE, WIS.

small ones by any means, especially when we recall that bags from small dealers and small contractors come to his hands and are apt to come to him in very bad shape. In fact, they come to him in such a shape that it is almost impossible sometimes to separate them and count them. Sometimes they come in bundles, wet, or again there will be a lot of dirty wet bags stuck within another sack, all of which have gotten wet in transportation and the cement is set up and the result is a stone like lump of bags and cement.

Mr. Brown is a strong advocate of having the bags tied up by stretching them out flat and laying them one upon the other until a pile of fifty is reached, and then tie them together at both ends with a rope. He says that does not cost much and he has eliminated a lot of trouble by furnishing the customer when he sells the bags with rope the right length with a loop in it to tie up the quantity of bags furnished to that customer. He says while all of them have not followed his advice, a number have, and it has saved him a great amount of trouble, because he can count those bags at one-fourth the expense, and much money as well as trouble is saved when they come in in good shape and condition. He says if he can get half the people to tie up the sacks when he sends the rope it will save money. He attributes most of the loss and disagreement over bags to a lack of care in tying them up. He says that with those people whom he has induced to tie up the bags as he has recommended, he has practically no trouble, but the others are a constant source of worry and annoyance to him. By constant hammering at your customer on this point, you may be able to eliminate some of the dissensions which you are having over allowances for credit for bags and for loss of bags, and claims of miscount, etc.

Special Barrels for Lime.

J. H. Barton, secretary Ash Grove White Lime Association, of Ash Grove, Mo., says: "I have carefully noted your letter and regret to say that we are not authority on how to preserve lime from air slaking, especially where handled in bulk. This spring we are going to put on the market a special barrel for keeping lime a long time. This barrel is made from sawed slack barrel staves, wheel jointed, so as to get practically an air tight package. We believe that our plan will be successful. We ship our lime just as rapidly as it is made, rarely having any in barrels longer than two or three days waiting on cars. We would think that the dealers would be able to furnish you with information asked for."

Handling Lime Unsatisfactory.

TOLEDO, OHIO, December 28.—Replying to your inquiry, will say our experience in the storage of lime has been very unsatisfactory. It would take several hundred dollars to make good our loss on air slaked lime last summer. We would be glad if we did not need to handle any lime in connection with other building products.

We will read with great interest anything you publish on this subject.

THE A. P. SOUTHWORTH CONSTRUCTION CO.

The Millville Filtration Sand and Brick Co., of Atlantic City, N. J., has been incorporated with a capital stock of \$10,000.00. The incorporators are: Harry C. Baney, Charles A. Idler, Charles B. Wilson, all residents of Atlantic City. The object of the company is to manufacture and sell brick, stone and building materials.

The Houston Builders' Exchange, of Houston, Tex., has been organized by W. W. Wilson, C. C. Wentzel and E. Y. Hartwell.

Mr. C. G. Reese, of Elizabethtown, Pa., of the prominent builders' supply house on West High Street bearing his name, is preparing to enter the hollow concrete block business, and is now investigating the different machines.

The Pope Cement and Brick Co. is now installing a Duplex Air Compressor at its bluestone quarries in Dunbar, Pa. This company is engaged in the manufacture of Ligonier paving block and concrete stone. The addition of the Air Compressor and rock drills will greatly facilitate their methods, and they expect to gradually increase their output.

Lime Storage.

A recent inquiry sent out by this office has brought out the information that a great majority of the builders supply men are not handling sufficient lime in small quantities, other than that which is put up in barrels, to give the matter of special storage any importance so far as they are concerned. However, it is probable that if the dealers and consumers realized the amount of air slacking which took place in a week's time they would give the matter of storage more attention. The tendency of the times seems to be, for the handling of lime in the bulk so as to reduce the amount of cooerage as low as possible. Almost every builders supply dealer has a certain amount of trade which calls for a half barrel of lime or a few lumps of lime which he usually sells by guess, losing each time a considerable quantity of air slacked lime which has fallen off from the lumps. Of course, this small trade pays a big price for the lime so that the dealers can afford to lose considerable in the way of air slacked lime. It would probably be far better if each supply house was equipped so that they could take care of bulk lime and put it in proper storage, so that without difficulty or without exposing the balance of the car, they could draw out their one or two barrels and deliver to small job work, either loose in the wagon bed or thrown into an old barrel. This storage could be made up of bins constructed of iron or concrete so that there would be no danger of fire. It is probable that a bin of about five barrels' capacity would be of good size. There have been a number of patents issued on special storage bins for lime in which it has been claimed that lime might be successfully preserved for two or three months. The type of lime and the manner in which it has been burned, as well as the atmospheric conditions of the section of the country where it is stored, will all have an influence on the length of time it may be held successfully.

From the correspondence consequent to our inquiry, the fact is also brought out that the builders supply man is inclined to be partial to hydrated lime for the filling of small orders. We are glad to see this, because it is a logical solution of the whole matter. With the hydrated lime, either in paper, burlap or barrel, there is no danger of fire, and practically no deterioration, even if it is necessary to store as long as six months, and there is almost no use in which quick lime is applied for which the hydrated product would not be equally satisfactory, and as a rule more desirable, and a more convenient form for handling a small job of plastering. Such as patching jobs and the like of that are very readily handled by the purchase of a single sack of hydrated lime. The introduction and the education of the people to the proper use of hydrated lime, will materially aid the increased consumption of lime in the territory which has been usurped by the hard wall plaster manufacturer. If you can give the consumer a package of lime as convenient for handling as a package of hard wall plaster, there are many instances where he will prefer the former. In many cases the fact that it was necessary with the use of lime to go around and hunt up a tight mortar box, get a barrel of lime, slake it and have to wait until it was properly seasoned before work could go on, has thrown patronage to the hard wall plaster man. We are talking now from the point of view of the lime man solely, therefore, do not put forward any of the advantages which the hard wall plaster manufacturer might claim. We are only pointing out a few of the reasons why hard wall plaster has made greater inroads on the lime business than they would have done had all the lime men been fully conversant with the possibilities of hydrated lime, as well as with the reasons which made hard wall plaster desirable in many cases.

Let Us Help You.

We desire to thank publicly the many firms who so frankly responded to our inquiry, and we trust that when you are perplexed over any problem in your business that you will bring it before us so that we may aid you through the frank statements of our many friends and co-workers. We further assure you that we do not wish intentionally to give to the public any man's business secrets. However, each manufacturer, producer and dealer in any particular line will bear it in mind strongly that the better condition he can place the industry in as a whole, the better are his chances for progress. In this day and age everybody in any particular line must of necessity work to-

gether for the general promotion of that line, otherwise, another line is bound to encroach on his territory to a very material detriment of his business. Co-operation on all things should be the watchword. We should always figure how to give our customers something of more value than he has been getting for the same money, even though it might be necessary to increase the price per pound.

The Experience of a Few.

Mr. Fred Daub, of Belleville, Ill., who carries a storage capacity of 5,000 bushels, which is sufficient to run him through the months of June, July and August, which is the worst season in the year for his lime to get damaged in transit, states that it is of great importance to construct bins strong enough to withstand expansion. He further states that the greater bulk stored in one bin the less is the percentage of air slacked lime. He always fills his bins during the cold weather, and in shipping in hot weather if he finds a bin of lime which has been filled recently to show air slacking to any degree, he simply lets that lay and takes the bins which were filled in the winter and have been closed all of the time. While he is satisfied that with his local conditions, it is a wise proposition to store, he states that he can realize it would not be practical in all cases to store lime.

The Alton Builders Supply Co., of Alton, Ill., reply that they are at present putting up a warehouse and store building and are building lime bins to extend from the second floor to the cellar. As we are going to use an electric elevator, we expect to load our trucks in the car, run them into the warehouse on to the elevator and dump into the bins. The bottom of the bins will be high enough to allow the trucks to pass under, thus avoiding the extra shoveling. We are making each bin to hold a small car only so that one car can be used up before starting another. The bins will all join on the side and by making them good and tight, otherwise we believe we can keep the lime from slacking to any great extent. This is an experiment of our own and is not operating yet, but we will be pleased to let you know later the advantages of it.

Alfred Hiller, of the Alfred Hiller Co., New Orleans, say that they find hydrated lime a solution for the problem, and that they find much of their larger trade is well pleased with it, especially the sugar people.

ASPHALT ITEMS.

The Barber Asphalt Paving Co., of Washington, D. C., has filed an amendment changing its principal office from Washington, D. C., to Philadelphia, Pa.

The National Asphalt Co., which formerly had its headquarters at Philadelphia, Pa., has been declared bankrupt and the receiver, Henry Tatnall, has been discharged. All the assets have been taken over by the General Asphalt Co. The National Co. has been practically out of business for some time.

The holdings of the Green River Asphalt Co., of Bowling Green, Ky., have been sold by the master commissioner. These consisted of tools, machinery and mineral rights on two thousand acres of land on Green River. It is probable that the quarries will be reopened by the purchasers.

The Central Asphalt and Refining Co., of Port Neches, Texas, will resume operations in the near future. This plant originally cost \$3,000,000.00, and was erected for the purpose of making asphaltum by a secret process. It was a failure and the plant was closed down. It is to be equipped and run by a new company, which will manufacture asphaltum.

The Central Asphalt and Refining Co., of Beaumont, Texas, has been purchased by General Samuel T. Cyrenes and associates, of Memphis, Tenn., for \$150,000.00. The company will be reorganized and plant will be remodeled.

While in Chicago the other day we had the pleasure of a chat with Mr. Bicknell, of Landers, Morrison, Christenson Co., of Minneapolis. These people do a large builders' supply business in that city. Mr. Bicknell, in speaking of the business of the year, said: "We have done quite a satisfactory business, but conditions have not been as favorable as last year." Mr. Bicknell was having a session with cement manufacturers.

The Little Fellow's Dollar.

Courteous treatment toward your customer who buys the smallest amount is just as essential to your success as smiling upon the largest buyer. Unfortunately some business men do not appreciate this fact. They are too easily influenced by the enormity of a man's trade to show the little fellow the proper attention. True, your time is valuable; and in this age of thrift, is measured out at so much per minute. Nevertheless the little man in business, like the acorn, grows sometimes to towering proportions, and you would then like to have his business.

It is not the lack of courteous attention that should govern your dealings with customers, but a high regard for his ability to pay for what he purchases. This is the pitfall of business enterprises. Because a firm put on a bold front and shout loudly to the multitude, don't be deceived into the assurance that such a concern is above par. Judgment of the uncommon kind is necessary in business. Foresight, attention, politeness, integrity; these are some of the essentials to a successful management of affairs.

Having a regard for the little fellow's dollars is one of the trifles in business that go toward its ultimate success. Let a man feel that he is welcome; that his trade is just as eagerly sought as another's; that his dollar has the same purchasing power as the big man, and he will seek out that place to do his trading. Further than this, he will send other customers and act as a most helpful advertising medium. In seeking trade a dealer must have no favorites.

Slacking Lime for Mortar.

Exception has been taken by J. C. Hanahan, of Charlestown, S. C., to the method proposed for slacking lime as given on page 30 of the September issue of ROCK PRODUCTS quoting Gilmore's work, page 179, as authority for believing that the practice suggested in the article is not the best.

It is a well known fact that different limes require different handling during the slacking, in order to produce the best results. It is also a well known fact that if insufficient water is added there is danger of burning at some time during the process of slacking. Especially is this the case, if it be hot or high calcium lime. It is also a well known fact that sufficient water can be added to prevent the development of the best properties in the lime, probably due to the prevention of the development of sufficient heat to generate vapor, which will be the means of breaking the lime into small particles and bringing it into contact with more water.

Heat and vapor formed during the slacking undoubtedly have their offices to perform, and to be to a certain point are undoubtedly beneficial, but there seems to be a point reached where sufficient heat can be developed in the absence of something to take the heat up, at which the lime will assume that condition which is commonly known as lime burned during slacking. When lime takes on this condition it will not carry the same amount of sand and will work short. If you were to try to slake a hot or high calcium lime in exactly the same manner of manipulation as you would dolomite lime, you would undoubtedly get some overheated lime.

Each section and each man has his own ideas about these things, and each one thinks he knows best (and probably does) how to handle the lime which he is accustomed to use, and in many cases the lime has been condemned by the mason or plasterer because he did not know how to successfully slake this particular kind of lime, he having been accustomed to handling an entirely different type of lime.

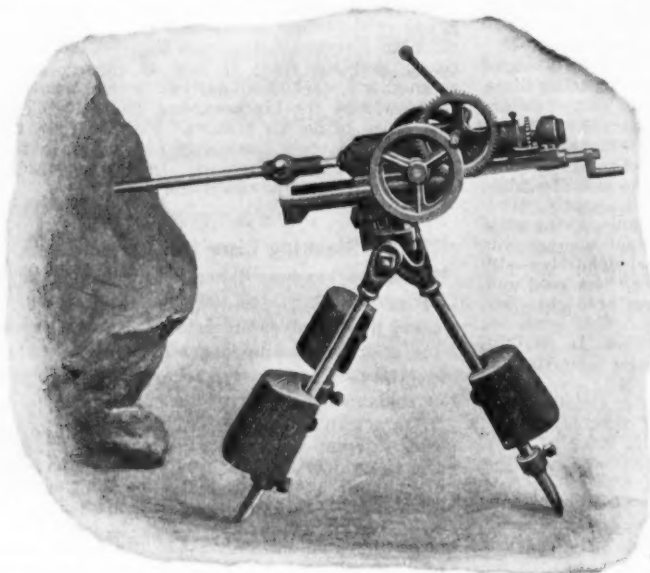
Mr. W. M. Leftwich, Nashville, Tenn., who has for a number of years been connected with the Nashville Roofing and Paving Co., will enter the business of contracting engineer with offices in the Cole Building. He will operate under the firm name of W. M. Leftwich Co. They will make a specialty of cement construction and gravel roofing, the actual construction being under the principal direction of Mr. B. T. Young, who has had thirteen years' practical experience in composition roofing and cement work. The new company will also operate in the construction of waterworks plants, sewerage systems and the like.

Side Talk.

The Jackson Hand Power Rock Drill.

We give an illustration of one of the Jackson Hand Power Rock Drills in use on the reduction of a large boulder. It shows the pattern used in quarry and general surface work, mounted on tripod. It can be easily carried around and set up anywhere in the most difficult and inconvenient positions where it is expensive and troublesome to carry power.

It is now in operation in 600 quarries and mines. The body is made of high grade cast steel, rendering it virtually unbreakable. The working parts are constructed of machine and tool steel.



and are made by special tools so that the parts of one machine are exact duplicates of the same parts in all others.

The interior mechanism consists of but two moving pieces, a ram with collars of one solid steel forging, and a cam axle and cams also of a single steel forging.

The crank may be turned slowly and evenly by reason of the momentum imparted by small flywheels, the operator experiencing no jar or shock whatever.

The crank may be attached to either side, thus permitting holes to be drilled close to side walls

and in corners. If desired the drill may be operated by two men, using a crank on each side.

The Jackson Hand Power Rock Drill is the result of many years' experimenting. It is so simple that it can be operated by an unskilled or ignorant laborer or by any person without previous experience in rock drilling or with mechanical devices of any nature.

It is warranted for two years and the company gives a guarantee to the effect that provided a small piece of broken part of any drill bearing their license plate is returned to them within two years from date of sale, all charges prepaid, and plate number given, they will replace such parts free of cost f. o. b. New York.

The company have a great number of testimonials from prominent firms certifying to the efficiency and easy working of the drill and its saving of bits by its steady and uniform operation; and all unite in certifying that one drill does as much work as three men with hammer and bit, and many say four. Whether in granite, or seamy rock full of iron, or the hardest kind of crystallized lime stone it works equally well.

They are made by the H. D. Crippen Manufacturing Co., 25 Broad Street, N. Y., who also make mining and milling machinery and hand and power drills for clay, salt, coal, gypsum, etc., and they will gladly furnish a complete catalogue.

The special gear catalogue No. 10 of the C. O. Bartlett & Snow Co., of Cleveland, Ohio, has just been issued, in which is shown their different patterns for the various styles of gears made, spur, bevel, mitre, angle and worm. The catalogue is brimful of information and will well repay a careful examination. Illustrations are shown of the company's machinery in action.

The Granite Exchange Co., Boston, Mass., publishers of the rating book to the granite, marble, monumental, quarries and allied interests, announce that it will issue its annual edition, thoroughly revised, during March, as usual. Those placing subscriptions now will be the first ones to receive them.

Knows the Business Well.

Mr. J. U. Jones, of Dallas, Texas, one of the best known salesmen in the southwest, has joined the staff of Allis-Chalmers Co., of Milwaukee, and will hereafter represent the company and its widely varied products in Texas and its tributary territory.

Mr. Jones has had a wide experience. He began his business life as a machinist in the locomotive department of the Texas and Pacific railroad. Then



J. U. JONES, WITH ALLIS-CHALMERS CO.

for nine years he was superintendent of the plant of the Paris Gas and Electric Co. Leaving that position he built the Crook-Record plant in Paris, Texas, and operated it as manager for two years in opposition to the older plant. A combination of the two plants was effected through the efforts of Mr. Jones, who managed the two for a year afterward, as superintendent.

The next event in his business career was his joining the Southwestern Electrical and Construction Co., of Dallas Texas, as traveling salesman, and superintendent of erection for the plants which the firm installed. Leaving that firm he was for three years in a similar capacity with Collins & Delaney, of Paris, Texas, and later with the Murray Co., remaining with the latter concern until the time of making his present arrangements with the Allis-Chalmers Co.

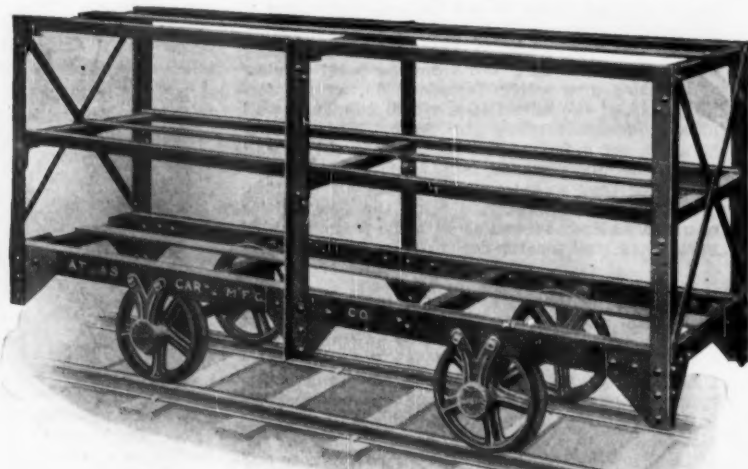
Cars for Handling Cement Blocks.

Concrete block and concrete construction in varied lines is coming to the front every day, especially as Portland cement has touched a low mark. Engineers are designing buildings and bridges that would not have been considered years ago, in cement, as the cost would have been too great.

The economical handling of cement blocks has been made a study of by the Atlas Car and Manufacturing Co., of Cleveland, Ohio, and herewith is shown two styles of cars made by it and especially adapted for handling such products from the moulding machines to the hardening or drying tracks. They are made especially rigid so as to handle the material without jar or shake. They are provided with springs and spring bumpers, are



CONCRETE BLOCK CAR NO. 117.



CONCRETE BLOCK CAR NO. 116.

easily loaded and unloaded, and have roller bearings, which device does away with hard work in shoving. A boy can shove them with ease when loaded.

In a large plant transfer cars are used, also turntables, near the machine, thereby allowing a very compact arrangement of tracks and economizing in space.

A Prosperous Wisconsin Concern.

The Power and Mining Machinery Co., of Cudahy, Wis., who build the McCully gyratory crusher, as well as a complete line of machinery for rock crushing plants, report a very good business in this department, and the outlook bright.

A few of their recent sales include the following:

Jacob & W. H. Watt, Lafayette, Ohio, one No. 3 McCully crusher.

Globe Iron Works, Jackson, Ohio, two No. 4 McCully crushers.

Chas. T. Eastburn, Yardley, Pa., complete rock crushing plant, including one No. 6 and one No. 4 McCully crusher, elevators, screens, etc.

The Reading Cement Co., Evansville, one No. 5 McCully.

The Ziegenfuss-Heiberger Co., E. Allantown, Pa., complete rock crushing plant, including one No. 5 McCully crusher.

Blesamz Stone Co., Winona, Minn., complete crushing plant, including one No. 5 McCully.

The Guggenheim Exploration Co., Santa Barbara, Chihuahua, Mexico, one No. 5 McCully crusher.

The Ellsworth Stone Co., Iowa Falls, Iowa, complete stone crushing plant including one No. 5 McCully. A novel feature of this plant is that the water power is used for driving all the machinery.

The Milwaukee Falls Lime Co., Grafton, Wis., complete rock crushing plant, including one No. 5 McCully.

Empire Lime Co., Shirkton, Can., one No. 7½ McCully.

Pugh Stone Co., Lima, Ohio, one No. 4 McCully.

They have also sold a number of crushers to parties operating on the Pacific Coast, including several No. 3 crushers and a No. 5.

This company is now branching out into the cement machinery line and will build ball mills, tube mills, driers and a complete line of machinery for cement mills.

They announce that a catalogue of their rock crushing machinery will be ready for distribution soon and will be mailed upon request.

INFORMATION BUREAU.

874.—I desire information on the process of making brick with lime and sand.

875.—I want addresses of makers, also prices, etc., of cement machinery for making building blocks and sand lime brick.

Wanted and For Sale

One insertion, 25c a line; Two insertions, 50c a line; Three consecutive insertions with no change in the composition, 50c a line. Count eight words to a line; add two lines for a head.

WANTED—HELP.

SALESMEN—We want good salesmen all over the South for the Winget building block machine. Address A. D. MACKAY & CO., Chamber of Commerce, Chicago, Ill.

FIRE BRICK

High-Grade Fire Brick and Special Blocks for Lime Works and Cement Works. :: :: :: ::

EVENS & HOWARD FIRE BRICK CO.

St. Louis, Mo.

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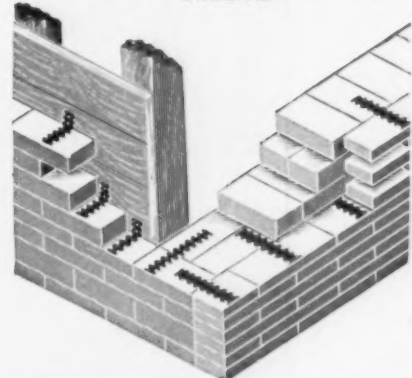
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OOLITIC LIMESTONE OF INDIANA.

Back in the fifties when the first shovelful of earth was removed in the construction of the Louisville, New Albany and Chicago Railroad, now known as the Monon Route, it not only signaled the beginning of a great steel highway connecting the metropolis of Kentucky with the great city on Lake Michigan, but was destined to be of greater importance to the country at large as the direct cause leading up to the discovery and development of Oolitic limestone in Indiana.

Its discovery made a new era in the history of stone construction in America. With rapid strides it forged to the front until now it is in the leading rank of building stones, and is encroaching upon the monumental and other fields by reason of its peculiar adaptability. All this has happened in the memory of men yet in the prime of life. There are few, perhaps, outside of stone men, builders and architects, who appreciate the importance of the discovery which was to result from the first thrust of the workman's shovel in the building of the new railroad.

Operations began in New Albany and progressed to Salem, where the first traces of the new stone was struck. The construction hands noted that the rock near this little town, which they

dianapolis. The building of this structure was decided upon just about the time that the product of the Bedford quarries began to create a stir in the world. The State authorities wanted a building that would do credit to Indiana, and an extensive investigation was set afoot to determine the best material. The Oolitic limestone was selected not because it was an Indiana product, but because in the opinion of competent judges it excelled all other stones for their purpose.

To-day there is not a State in the Union that has not one or more important buildings constructed of Oolitic limestone.

Chicago has always been a great market for the product of the Bedford quarries. The first building of Oolitic limestone was erected in the Lake City in 1876. Following that, scores of others might be mentioned, the number increasing with each year. The great Auditorium Hotel is built of Oolitic limestone, and the new Tribune Building, now just completed, is constructed of the same material. Many handsome private residences in Chicago, as well as in every large city in the land, are built of the product of the Lawrence and Monroe county quarries. This ideal building stone is used in the construction of the capitol building



THE STATE CAPITOL OF INDIANA AT INDIANAPOLIS

prepared for ballast, was easily worked up when taken fresh from the quarries, and that it had the property of hardening when exposed to the atmosphere.

By degrees these quarries began to attract outside attention, and shrewd men began to speculate upon the possibilities of the stone for building purposes. Louisville capital became interested at this point and scientific investigation was instituted. Practical tests were also made, and the result of these and the researches was fully to demonstrate the great value of the stone, and to cause enterprising and far-seeing men to invest money and lend all their efforts to developing it and bringing it to the front. However, it was not until about 1872, that the product of the new Indiana quarries began to receive the recognition to which it is so richly entitled.

Careful tests and comparisons with the world-renowned Oolitic stone of England, out of which many of the celebrated palaces and older feudal castles dating back to the time of the Tudors, are built, showed that the Oolitic stone of Indiana was its equal in every respect.

The first great tribute to the superiority of the Indiana Oolitic limestone was fittingly paid by the State of Indiana in the selection of it as the material for the new Capitol building at In-

dianapolis, the Post Office and Custom House, and the City Hall of Kansas City, and the Post Office of Worcester, Massachusetts. The only permanent building at the St. Louis Exposition, the Palace of Fine Arts, is built of Indiana Oolitic limestone. Hundreds of others might be mentioned, among them the palatial Hotel Astor in New York City, and the Custom House at Louisville. It is said that the massive pillars in this last named structure of the largest monoliths ever taken out of the quarries.

Indiana Oolitic limestone is found in two tints, buff and blue, the buff prevailing. Sometimes exquisite effects are produced by using the stones of both colors so as to contrast them. Operators describe the stone as "cutting like cheese." The ease with which it can be worked was demonstrated at the St. Louis Exposition where one of the exhibits consisted of a screw cut out of the stone and fitted with a stone nut that worked perfectly.

Oolitic stone is coming to be used more frequently all the time for monuments and fine carvings. Not only is it handsome in appearance and susceptibility of a high polish, but it can readily be carved with the most intricate and beautiful designs.

Oolitic limestone would eventually have secured the recognition due it by reason of its merit alone, but brains and enterprise have hastened its progress to the front.

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Planed
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Turned**

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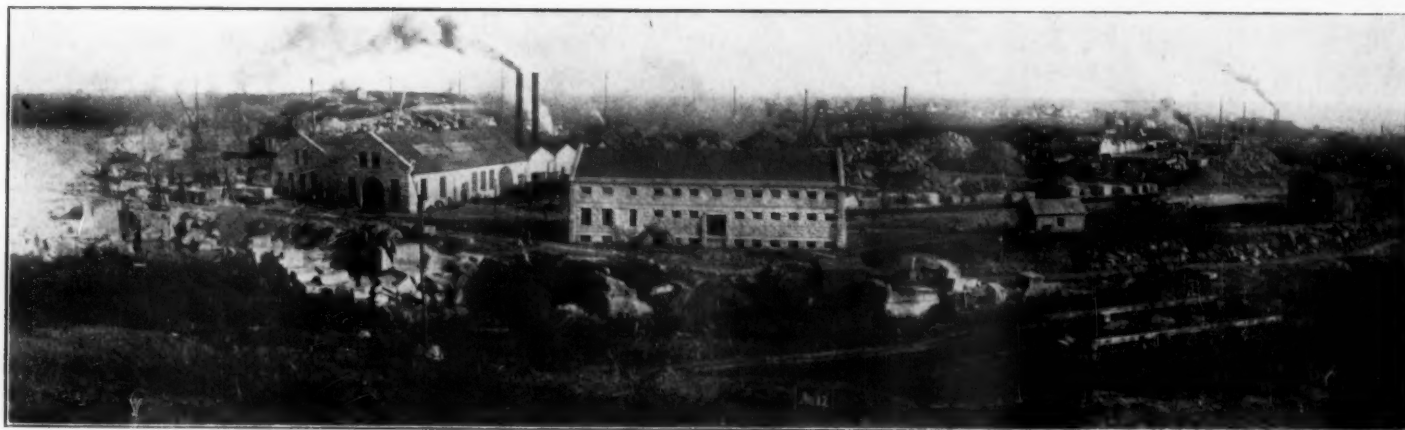
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52 designs, price . . \$1.00

BEDFORD, IND.

Tell 'em you saw it in ROCK PRODUCTS.

Chicago and Bloomington Stone Company,

BLOOMINGTON, INDIANA.

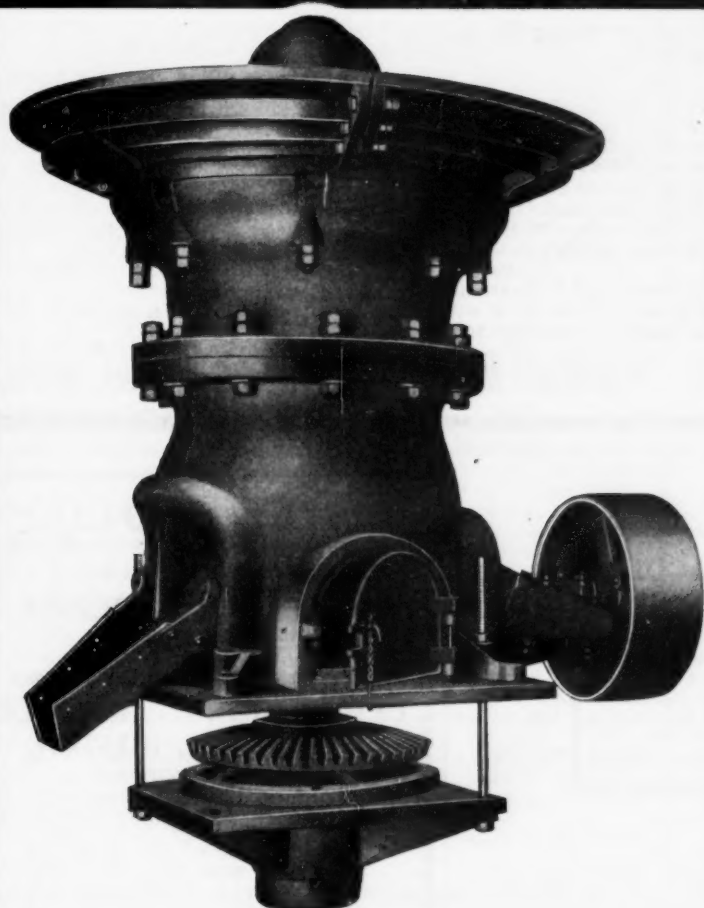
Quarry and Mill.

Anything you want in

Oolitic Limestone

Rough, Sawed,
Planed, Turned,
or Bridge Stock.

GET OUR QUOTATIONS ON ALL JOBS.



BOTTOM DROPPED.

The McCully Gyratory Crusher

Embodies all the most recent improvements in crushers.

The Suspended Head and Shaft (Patented)

The Drop Bottom

The Removable Countershaft Bearing

The Side Door

All ORIGINATED in the McCully

Two Arm Spider
Perfect Oiling System.

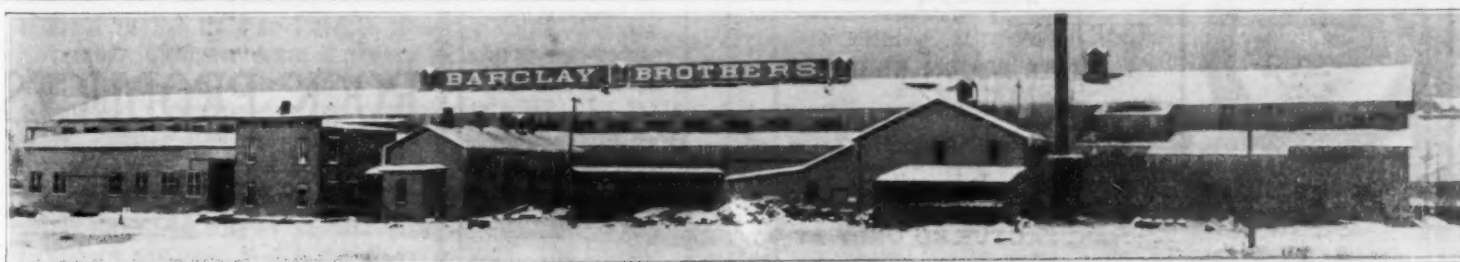
We make these Crushers with either Standard or Right angle drive in all sizes from No. 1 to No. 9.

NEW CATALOGUE ABOUT READY.

Power and Mining Machinery Company

CUDAHY, WISCONSIN

BRANCHES:- 52 William St., New York, First National Bank Bldg., Chicago, Farmers Bank Bldg., Pittsburg, Real Estate Trust Bldg., Philadelphia, Monterey, N. L., Mexico



A VIEW OF OUR PLANT IN MID-WINTER.

QUARRIERS, MANUFACTURERS AND POLISHERS.

Our plant is equipped with all modern granite working machinery. Pneumatic Tools, Surfacing Machines, Gang Saws, Column Lathes, all styles of polishing machinery, overhead travelling cranes, etc.

Representatives:
W. E. Hussey, Utica, N. Y.
Chas. H. Gail, 79 Dearborn Street, Chicago.
C. C. Jenkins, 1 Madison Avenue, New York

BARCLAY BROS., Barre, Vt.

Tell 'em you saw it in ROCK PRODUCTS.

TWO IMPORTANT STATEMENTS.

One from the Globe-Democrat, St. Louis, Mo., in which they retract their statement regarding the Normandin Machine published in their issue of November 19, 1904.

Another from James R. Gray, Clerk of the United States Circuit Court at St. Louis, Mo., in which court this alleged injunction against the Normandin Machines is claimed to have been issued.

St. Louis Globe-Democrat, Friday Morning, December 9, 1904

Injunction Was Not Issued Against Normandin Machines.

The GLOBE-DEMOCRAT having recently published a statement to the effect that an injunction had issued against the Normandin Cement Block Machine, desires to retract this statement in full. We were misinformed as to the character of the suit and the parties affected by it, and in justice to those concerned wish to say that the proprietors of the Normandin machine were not named as parties to the litigation referred to, nor was the Normandin machine referred to therein. Our mention of this machine in connection with the proceedings was a mistake, which we cheerfully correct.

Any man about to buy a block machine will do well to remember that a concern which will either start or circulate a lie to sell its wares is doing it for the sole purpose of getting the purchaser's money for an article so far inferior that it will not sell on its merits.

UNITED STATES CIRCUIT COURT CLERK'S OFFICE

James R. Gray, Clerk
THE CEMENT MACHINERY CO., JACKSON, MICH.

St. Louis, December 2, 1904.

GENTLEMEN: In reply to your favor of this date, and as requested by you therein, I have made careful and diligent search of the records of the United States Circuit Court and United States District Court at this place, of which I am Clerk, and find that no suit has ever been instituted or commenced by the H. S. Palmer Hollow Concrete Building Block Company against The Cement Machinery Company, in either of said Courts, and that no writ of injunction or other process has ever been issued out of said Courts in favor of said H. S. Palmer Hollow Concrete Building Block Company against said Cement Machinery Company of Jackson, Mich. Neither is there any record in such Courts of any proceedings or suits of any kind having been commenced by the Harmon S. Palmer Hollow Concrete Building Block Company, expressly charging or alleging that any particular Block Machine, or any of the parts or devices of any particular Block Machine are infringements upon any patents or rights of the machine of the Harmon S. Palmer Hollow Concrete Building Block Company. Very truly, JAMES R. GRAY, Clerk of the United States Circuit Court,

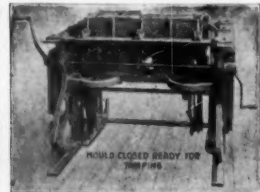
Eastern Division Eastern Judicial District of Missouri.

The Normandin Block Machine is the most popular Block Machine on the Market and it always has been. Our competitors know this and so does everybody else. It's popular—why? Because mechanically made and it will do what we say it will. We are too responsible to misrepresent our machines. Honesty is always the best policy, and on these lines only is the Normandin Machine sold.

The demand for Normandin Block Machines at the present time is larger than ever before.

CEMENT MACHINERY CO., Jackson, Mich.

"THE WINGET" Building Block Machine



PATENTS GUARANTEED
ADJUSTABLE Makes Blocks any size or shape by simply changing plates **AUTOMATIC**

Forch Column Blocks 45° and 90° Angle Blocks
Circular Blocks 4 inch Partition Blocks (hollow)

FACING made easy and practical by means of tilting adjustment
FLUES clear bottom to top for ventilation, fire flues, piping or wiring
CAPACITY—150 Blocks (equals 6,000 bricks) in 10 hours—4 men

A. D. MACKAY & CO., Chamber of Commerce, CHICAGO



We take this means of notifying the trade that our best grade of **WHITE ROCK FINISH** is put out under the name of **TIGER BRAND**.

"TIGER BRAND" **WHITE ROCK FINISH** costs more money than any other prepared lime on the market. If you are buying hydrate of lime insist on getting **TIGER BRAND WHITE ROCK FINISH**. It is well worth the difference in price.

MANUFACTURED ONLY BY

THE TOLEDO WHITE LIME COMPANY,
TOLEDO, OHIO.

INSIST UPON THE TIGER.

Tell 'em you saw it in **ROCK PRODUCTS**.

"BIG FOUR"

THE BEST LINE TO

**INDIANAPOLIS, PEORIA,
CHICAGO,**

And all Points in Indiana and Michigan.

**CLEVELAND, BUFFALO,
NEW YORK, BOSTON,
AND ALL POINTS EAST.**

Information cheerfully furnished on application at City Ticket Office, "Big Four Route," No. 259 Fourth Avenue, or write to S. J. GATES, Gen'l. Agt., LOUISVILLE, KY.

ROCK PRODUCTS

ONE YEAR

ONE DOLLAR.

A CARD TO THE BUILDING TRADE

Copy of ADD in Municipal Engineering, October, 1904

"WE shall be pleased to meet you at our Exhibit, Block 11, Mines and Metallurgy Building, Universal Exposition, St. Louis, where we can show you our NORMANDIN BLOCK MACHINE in detail. Our Mr. W. W. White is in charge, assisted by our machine expert and demonstrator, Kirk H. Brown; don't fail to call."

Signed: CEMENT MACHINERY CO., Jackson, Mich.

(Copy.)

Circuit Court of the United States

EASTERN DISTRICT OF MISSOURI.

HARMON S. PALMER HOLLOW CONCRETE BUILDING BLOCK COMPANY,

COMPLAINANT,

VS.

WILLIAM W. WHITE & KIRK H. BROWN,
DEFENDANTS.

FINAL DECREE.

It is ordered adjudged and decreed as follows:

That letters patent of the United States to Harmon S. Palmer, No. 727,427-727,428, Dated May 5th, 1903, and 731,323, Dated June 16th, 1903, are good and valid patents, * * *

That the Harmon S. Palmer Hollow Concrete Building Block Company, Complainant named in the Bill of Complaint herein, is the owner of all right, title and interest in and to said letters patent.

That the defendants herein, WILLIAM W. WHITE and KIRK H. BROWN, have infringed said letters patent * * * and upon the exclusive rights of Complainant, HARMON S. PALMER HOLLOW CONCRETE BUILDING BLOCK COMPANY by making and using machines embodying in their construction and method of operation the inventions covered by each of said letters patent.

That a perpetual injunction issue out of and under the seal of this Court, directed to defendants, the said WILLIAM W. WHITE and KIRK H. BROWN, their attorneys, clerks, agents, servants, and workmen, and all claiming under or through them enjoining and restricting them and each of them from directly or indirectly making, USING or SELLING, machines * * * embodying or employing said inventions claimed and patented by said patents, * * *

That Complainant DO RECOVER from said Defendants, WILLIAM W. WHITE and KIRK H. BROWN, the costs in this case, to be taxed, and that said Complainant have execution therefor against said Defendants.

(Signed) ELMER B. ADAMS, Judge.

November 15th, 1904.

IN view of the denial by the Normandin people that the Palmer Company has secured an injunction as claimed, and the further fraudulent claim that they owned certain interest in the Palmer Patents, under a contract dated November, 1900, we deem it proper to inform the public that neither W. F. Cowham, N. S. Potter or the Cement Machinery Company own or control any portion of the H. S. Palmer Patents. The paper referred to in their advertisement was an old option given at the time they bought one of the Palmer Machines. The option was for thirty days and was never exercised, and was given to a proposed company which was never formed. The patents infringed by White and Brown on the NORMANDIN machine were dated about three years later, May 5th, 1903. We are prosecuting users as well as manufacturers of infringing machines.

HARMON S. PALMER HOLLOW CONCRETE BUILDING BLOCK CO., Washington, D. C.

This is One of Them



WE have a series of nineteen brand-new designs on two-piece jobs and we can get any of them out at short notice. They are just the right sort for the retailer to sell either from the photograph or from the monument.

WRITE FOR PARTICULARS

BECK & BECK, Barre, Vermont
Quarriers and Manufacturers

The Place to Get Your Columns and Vases Cut in Granite is at the Old Reliable Dewey Column Cutting Works, Barre, Vermont

WE have a large and well equipped plant with turning lathes that will take care of all classes of work, from the small vases up to columns 12 feet by 3 feet.

A well equipped department for cutting square work in connection; also polishing of both round and square jobs.

OUR PAST RECORD IS OUR BEST ADVERTISEMENT



Dewey Column Cutting Works
BARRE, VERMONT

1826 The Granite Railway Co. 1903
 SOLE PRODUCERS OF THE FAMOUS
Dark Blue "RAILWAY" Granite
 Monumental and Building Work of all Kinds,
 Our Specialty—Fine Polishing—Prompt Shipments.
BATES AVENUE, WEST QUINCY, MASS.
 Trains from track 21, South Station, Boston, at 16 minutes past each hour of the day.

T. F. MANNEX,
 PROPRIETOR OF THE FAMOUS
A. Reinhalter Extra Dark Quincy Granite Quarry.
 Rough Stock for sale to the trade, also finished
 monuments, and every description of cemetery
 work. — Rolls, Columns, Balls, Vases, Round
 Monuments, Balusters, etc. Turned and Polished.
T. F. MANNEX, West Quincy, Mass.

JOSEPH BISHOP
 Manufacturer and Wholesale Dealer in
Quincy Granite Monuments
 From Best Light and Dark Stock
 INTERVALE STREET
QUINCY, MASS.

MILFORD (MASS) PINK GRANITE
 for Building Work or Monu-
 ments, can be obtained at
 lowest prices by applying to
T. F. MANNEX, W. Quincy, Mass.



I. W. BATES & CO., Barre, Vermont

THIS CLASS OF WORK IS OUR SPECIALTY

**Columns, Urns, Balls, Vases, Rolls,
 in Granite. Modern Cutting Lathes**

and most up-to-date machinery made. Square work that
 comes with a round job, taken care of in our own shop.

**I. W. BATES & CO., ——— GRANITE ———
 MANUFACTURERS,
 BARRE, VERMONT.**

The Rowan County Freestone Co.

QUARRIERS OF

KENTUCKY BLUESTONE,

**Mill Blocks, Dimension Stone,
 No. 1 Masonry Stone.**

SEASONED
 STOCK.

PROMPT
 SHIPMENTS.

FARMERS, KENTUCKY.

On Lexington Division Chesapeake & Ohio Railway.

RED HILL GRANITE

Nothing else just like it. A beautiful blend of
 three colors.

Takes a high polish and is well suited for
 monumental work.

Rough base and building stock furnished at
 low prices.

Its color and grain make it a favorite with
 architects.

If you do not know the stone write for sample
 and prices.

**MACHIAS GRANITE CO.
 MACHIAS, MAINE.**

WAUSAU RED GRANITE

Famous for its color and brilliancy.
 We have the finest stock in this dis-
 trict, either in the rough or finished.

ANDERSON BROS. & JOHNSON
 GRANITE HEIGHTS P. O., WIS.

**B. B. B.
 BEDFORD BUFF BLOCKS
 AND SAWED STONE**

We are in a position to furnish choice Buff Blocks or Sawed Stone on
 short notice and at best prices. Address all communications to
THE EAGLE STONE COMPANY, Bloomington, Ind.

Granite Prices.

There is a book that is not for sale, but may be rented a year for
 \$5.00, that tells about—
 It is the official price list of the Barre Granite Manufacturers' As-
 sociation, which gives price pointers for any and all kinds of Granite work.
 Address THE FRANCIS PUBLISHING CO.,
 431 West Main Street, Louisville, Ky

THE ROGERS GRANITE CO.

Vault Work and Monumental Work
 Manufactured from best Barre Granite.

Estimates cheerfully furnished on all classes of Work.

P. J. ROGERS, Manager.

Barre, Vermont.

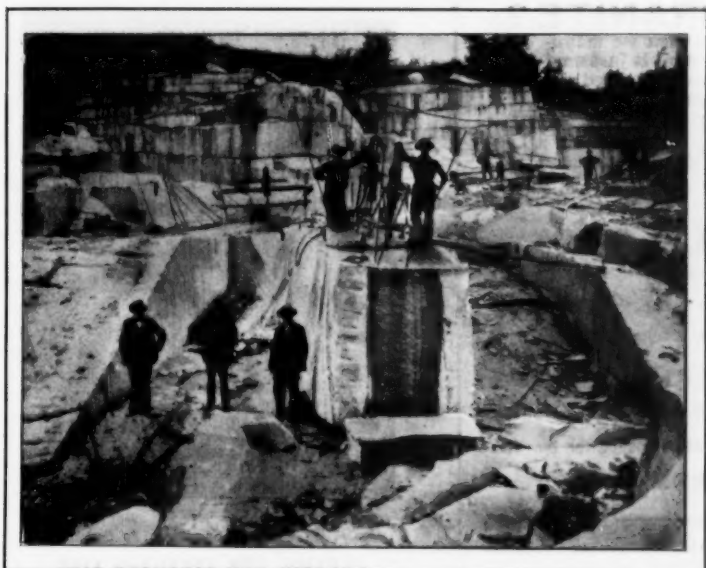
Tell 'em you saw it in ROCK PRODUCTS.

JOHN E. SMITH

ESTABLISHED 1868

DONALD SMITH

E. L. SMITH & COMPANY



Quarry Owners and Wholesale
Dealers in

Light, Medium and Dark Barre Granite

Rough Stock of any Dimensions
to the Limit of Transportation
Promptly Furnished at all Times

Quarries and Cutting Works :: :: Barre, Vermont

J. K. PIRIE

Proprietor of the Quarry formerly known as

THE WELLS, LAMSON & CO., DARK QUARRY, Graniteville, Vt.

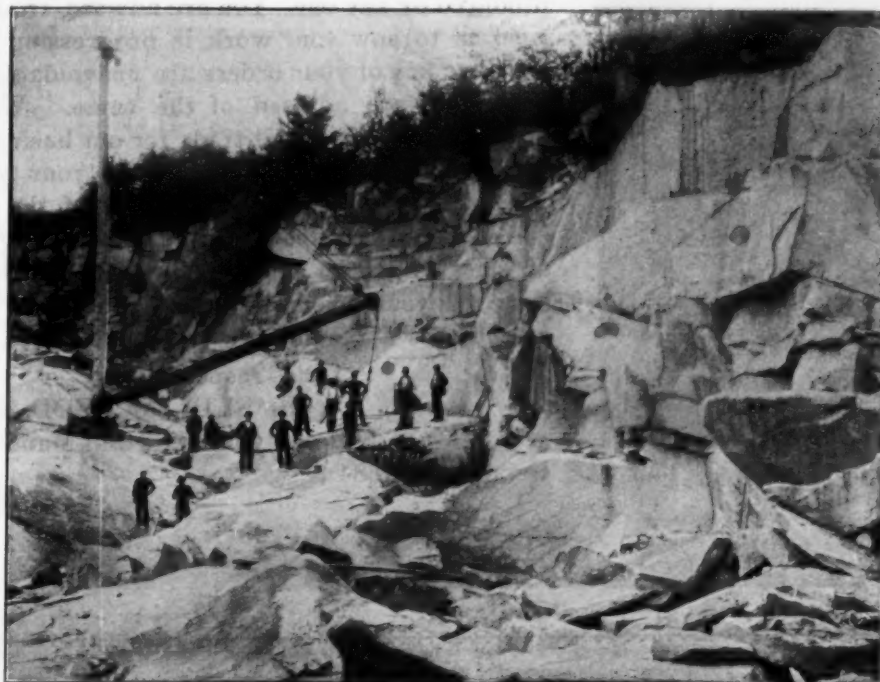
I have been in the company known as Wells, Lamson & Co. for 21 years and had the personal supervision of this quarry during that period.



Rough stock furnished to the limit of transportation.

Stock squared and polished for the trade.

Only five quarries in Barre producing dark granite and mine is second to none.



Among the important contracts for which the Granite was supplied from my quarry, are the following:

Broom County Soldiers and Sailors Monument, erected at Binghamton, N. Y.

Soldiers and Sailors Monument, erected at Kokomo, Ind.

Soldiers Monument, at Wellsboro, Pa.

Polished Columns and Carved Capitals for Mausoleum, erected by John L. Flood, at San Francisco, Cal.

Monument erected to Hon. A. B. Martin, at Lynn, Mass. One of the finest private monuments in New England

Tell 'em you saw it in ROCK PRODUCTS.

John E. Smith,
Donald Smith.

N. D. Phelps,
Mgr.

John Trow,
H. A. Phelps.

Barre White Granite Co.,
Successors to WHEATON QUARRIES.
White Granite FOR
MONUMENTAL WORK,
CURBING AND PAVING.
Write For Quotations.
BARRE, VERMONT.

ROBINS BROTHERS,

MANUFACTURERS
OF ALL KINDS OF

Cemetery Work from Barre Granite
BARRE, VT.

MATT HALEY,
BARRE, VT.

We build and furnish all modern improved derrick and cableways for quarries and contractors work.

BARRE GRANITE ?

Well, that is just what we manufacture and if you want it just send us a sketch of the work you need and we will gladly furnish you estimates.

J. O. BILODEAU Monumental Work,
BARRE, VT.

Granite City Polishing Machine.

Power Hoist with ball bearing,
Rope Buffers and Scroll Wheels,
Air Compressors and Auto-
matic Tools. New and Second-
hand Engines, Boilers, etc.
WRITE FOR WANTS.

W. A. LANE,
BARRE, VERMONT.

C. W. McMILLAN.

C. W. McMILLAN, Jr.

G. W. McMILLAN & SON,

SUCCESSORS TO McMILLAN & STEPHENS.

ESTABLISHED 1888.

Manufacturers of Light, Medium and Dark

BARRE GRANITE

AND ALL KINDS AND SIZES OF CEMETERY WORK.

Dies, Caps and Bases Squared and Polished for the Trade.

BARRE, VERMONT.



We have no Superiors in the
CARVING AND STATUARY LINE
TRY US.

RIZZI BROS.,
BARRE, VERMONT.

Mirror Photography

Satisfaction guaranteed in Granite Monumental designs. Give us a trial.

FRED C. EATON, - - Barre, Vt.

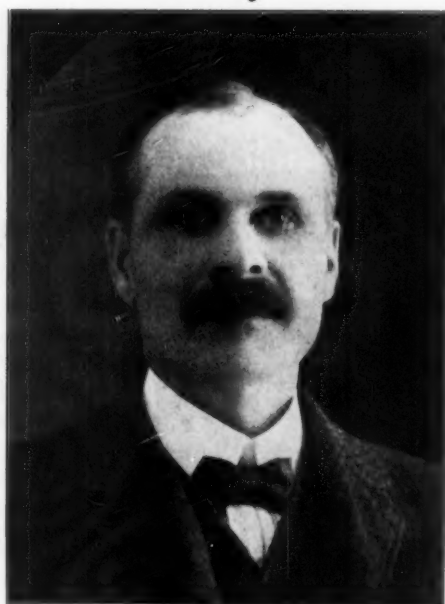
The place to buy all kinds of granite cutting tools is of

JAMES AHERN,

BARRE, VT.

Established in 1886.

Tools shipped all over the world. Write for prices.



DANIEL H. McLEOD.

Wishing the trade a merry Xmas and a happy New Year, we at the same time ask you for a part of your business during 1905. We will assure you good service, best grade of stock and work produced by any one. You are advised from time to time as to how your work is progressing and if at any time any of your orders are unavoidably delayed, customers are advised of the same. We depend altogether on the retail trade for our business, therefore, we don't hesitate to ask for your patronage. We make no specialty of any part of the business. We consider ourselves capable of handling any kind or class of work. Trusting you will favor us with some of your business which will have our best attention, we remain,

Yours respectfully,
EMSLIE, McLEOD & CO.,
Quarriers and Manufacturers.

Established 1884.

Tell 'em you saw it in ROCK PRODUCTS.

A Happy and Prosperous New Year

IS ASSURED TO ALL USERS OF THE

Anderson Patent Traveling Crane

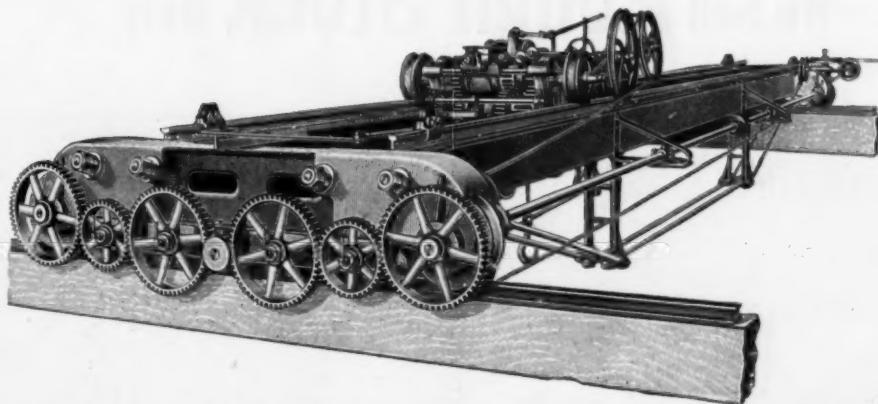
IF YOU HAVE N'T ONE, BETTER PURCHASE AT ONCE.

THE POWER TRAVELING CRANE

has become a recognized necessity in every stone-cutting plant

EVERYBODY CAN AFFORD ONE

at the price we charge, so all may enjoy its many advantages.



A SIGNAL MAN ISN'T NEEDED with our crane. Operator is over the work where he can best see to placing it.

THE PECULIAR METHOD OF ROPE

Driving employed is patented and is a great saver of power.

It is a Time Saver. It Handles Stone without Injury. It Facilitates Execution of Orders. It Brings the Expense Account DOWN and the Profits UP. 10, 20 and 40 Tons Capacity. Fully Described in Our Catalogue. We are Prepared to Furnish Plans for the Most Modern Stone Plants and the Complete Equipment.

LANE MANUFACTURING COMPANY, Montpelier, Vt.

WETMORE & MORSE GRANITE CO.

Finest Light and Medium

GRANITE

for Monumental or Building Work.

Any Dimensions Furnished to Limit of Transportation.

Stock for

Large Work

a Specialty.



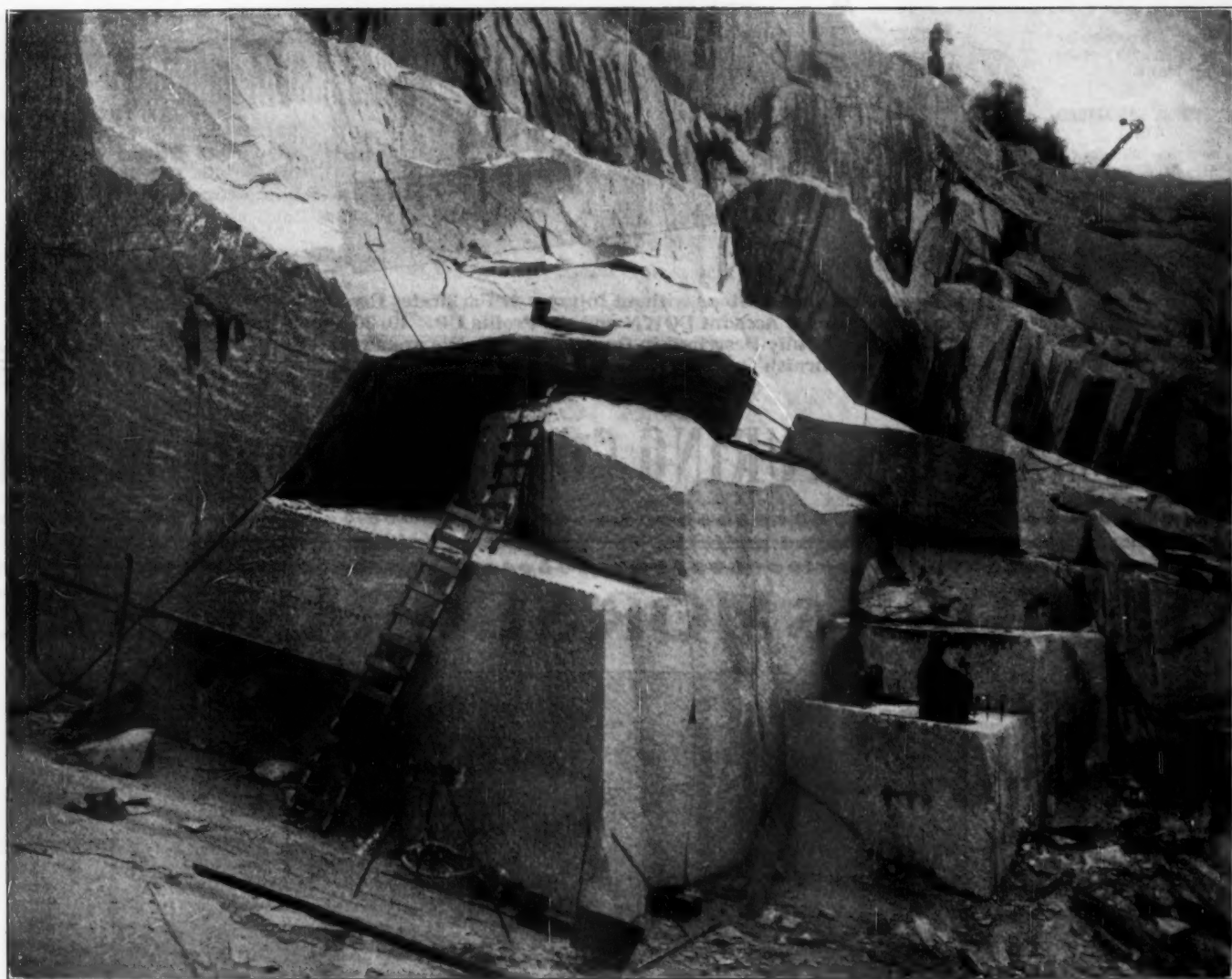
QUARRIES AT BARRE, VT.

OFFICE: MONTPELIER, VT.

Tell 'em you saw it in ROCK PRODUCTS.

BEST DARK BARRE GRANITE

We Sell **Rough Stock** only

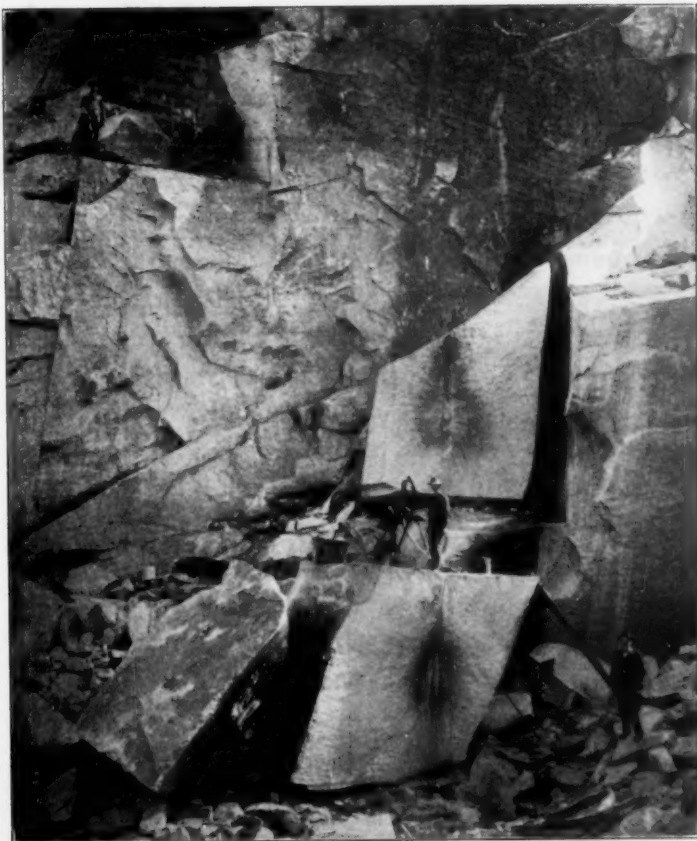


When Placing Orders Specify
that of

Boutwell-Varnum Granite Co.

Quarries at **BARRE,**
Office at **MONTPELIER, VERMONT.**

Tell 'em you saw it in **ROCK PRODUCTS.**



McDonald, Cutler & Co.,

BARRE, VERMONT

Quarry Owners and
Manufacturers of

**Monuments, Mausoleums
and Building Work**

WE CAN FURNISH

**Light and Dark Medium
Granite**

Orders For The Trade Solicited

Carborundum Grains

Carborundum Rub Stones

David Mowat's Steel Shot

Marvelous Putty Powder



**R. C. BOWERS
GRANITE CO.**

MONTPELIER, - VERMONT

WOODBURY GRANITE CO.



We make a specialty of rough stock orders and of
finished vaults. Try us, we can give you prompt delivery.

Two shades—*Woodbury Gray* and *Hardwick White*—the
whitest granite known.

WOODBURY GRANITE CO.

HARDWICK, - - - VERMONT.

Tell 'em you saw it in ROCK PRODUCTS.



This is a view of a small portion of our quarry. All grades of Barre rough stock furnished to the limit of transportation.

All the most modern machinery at both the quarry and cutting plant.

WE MAKE PROMPT SHIPMENTS.

We are prepared to handle anything in the line of manufactured work at our cutting plant.

We especially solicit heavy work and orders that you are particular about.

One of the Oldest and most Reliable Granite Firms in Barre.

Quarriers and Manufacturers.

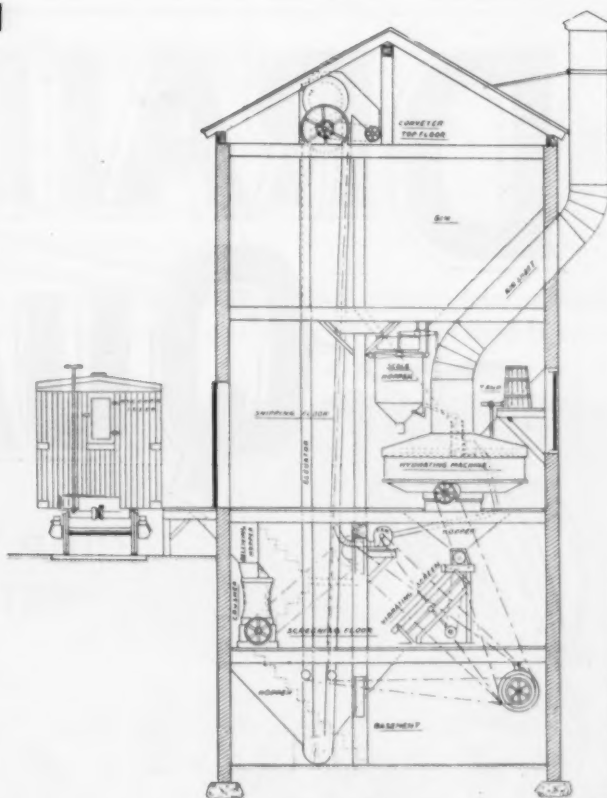
WELLS, LAMSON & CO.,
BARRE, VERMONT.

HYDRATING PLANT

End view of Hydrating plant 40 tons (10 hours) capacity 24x36 feet in size, having storage for 100 tons, showing relative position of machinery consisting of one crusher, one hydrating machine, one vibrating screen and one exhaust fan (for taking dust away from packing spouts, also necessary elevating and conveying machinery.

Note the simplicity of this layout, we can build you a plant to suit local conditions, or furnish you machinery and you do your own construction work.

No experiment, system being used in many of the largest and most successful plants in the country. Ask to have one of our experts call and talk the matter over with you.



HYDRATING MACHINERY

HYDRATING MACHINE

All iron and steel, nothing to wear out, pan 10 feet 6 in. in diameter, 20 in. deep, mounted on 70 1/2 in. polished steel balls, pan revolves and plows remain stationary, runs with less than 25 per cent. of power required by any other machine.

SECRET OF SUCCESS

The bringing of every particle of lime in direct contact with its proportionate share of water, the action of the plows is such that they thoroughly agitate the lime and turn it over so carefully that they **make no dust, absolutely dustless.**

Ask for Catalogue.

CLYDE IRON WORKS,
DULUTH, MINN.



Tell 'em you saw it in ROCK PRODUCTS.

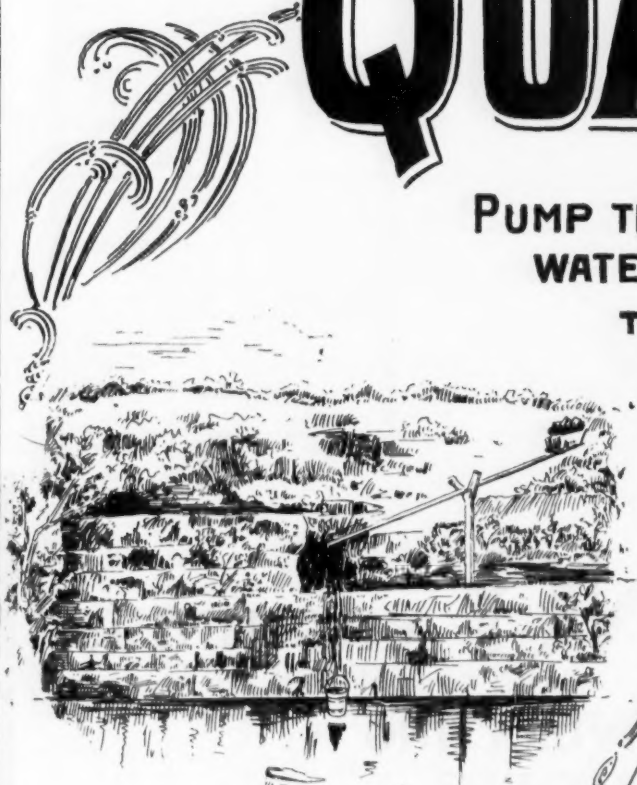
DRAIN YOUR QUARRY PITS

WITH A
PUMP THAT GRITTY, MUDDY
WATER CANNOT INJURE

THE

PULSOMETER STEAM PUMP

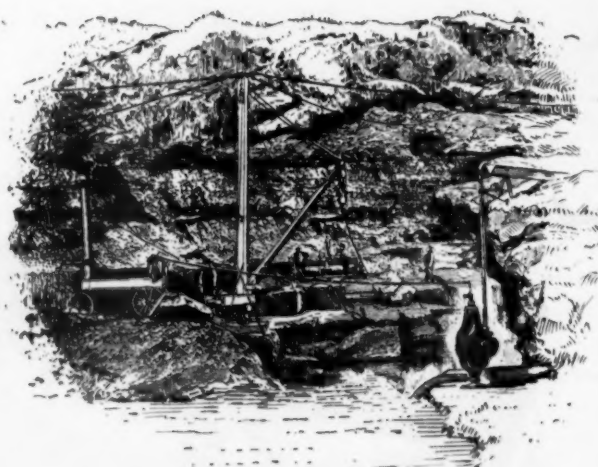
IS BUILT FOR HARD WORK.



OLD METHOD

REQUIRES NO
ENGINE TO OIL
NO PACKING

Operates
as well suspended
as stationary



NEW METHOD

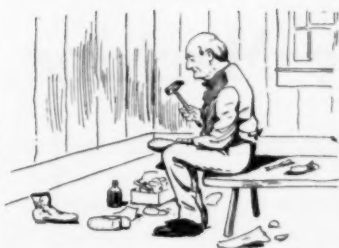
THE PULSOMETER STEAM PUMP Co.

1708 Whitehall B'dg

NEW YORK.

Illustrated descriptive catalogue free.

Tell 'em you saw it in ROCK PRODUCTS.



Hand-Pegged vs. Machine-Made

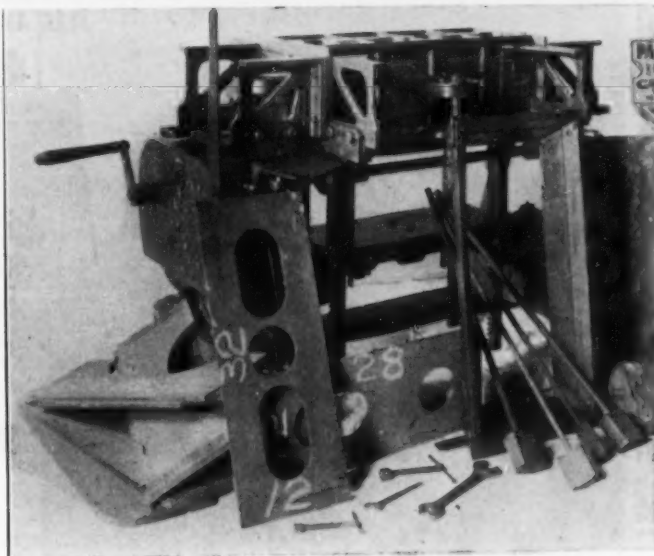
There is nothing to prevent a cobbler at his bench pegging away making shoes by hand. Neither does his doing so prevent the turning out by the gross of machine-made shoes that are as good and sell for as much, and in most cases fit better because of scientific perfection of the last.



So with Concrete Building Block Machines and their product—there is nothing to prevent “hand-pegged” block machines from springing up all over the land; but the machine-made blocks are better, and because of the more scientific construction of the “last” they excel in every respect. Why fuss around with cheap hand affairs? GET OFF THE COBBLER’S BENCH.



If rival interests don't like to hear about our machines putting up so many buildings—the only way they can stop the machines is to purchase them.



COPYRIGHTED BY NOYES F. PALMER, 1

If you can't come to see our machines and the five buildings erected here in Brooklyn from their product, similar to the illustration herewith, write for our catalogue with pictures showing machines at work, and of numerous other buildings erected with product from our machines.

Combined Machine and Press that was used to make the Cast Stone for five buildings like Illustration.

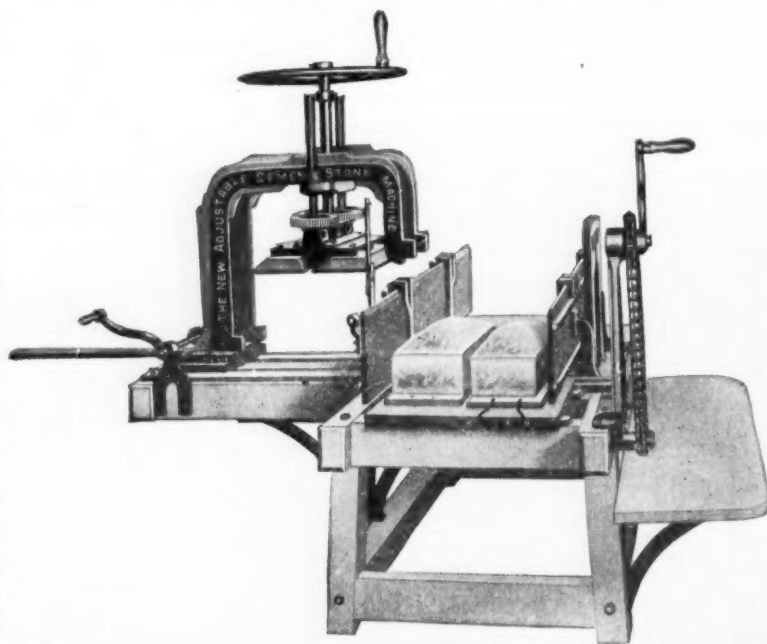
Palmer-Adjustable Cast Stone-Press.

NOYES F. PALMER MANUFACTURING CO.,

BROOKLYN, [E.] N. Y.

Tell 'em you saw it in ROCK PRODUCTS.

The Brady Adjustable Cement Stone Machine.



It is adjustable, enabling the operator to make two stones at one operation; any desired design of face or moulding. It is adapted to hollow wall, veneer, foundation work, water tables, mouldings, copings, arches, piers, caps, sills, quoins, keys, plinths, etc., and, in fact, any class of stone required in the construction of buildings. It makes stone in sizes from 6 x 2 x 2 to 17 x 60 x 8, and two stones at one operation in sizes from 6 x 2 x 2 to 8 x 60 x 8.

Cement stone made under positive and equal pressure and with two and one screened sand and cement facing will not absorb water or moisture. Build your building with cement stone manufactured by the Brady Adjustable; lay your walls with one or two-inch hollow space, using metal ties. It makes the driest, warmest and most durable, as well as the cheapest and strongest building you can build. Defacing is a thing of the past, if you use stone manufactured with the Brady Adjustable Cement Stone Machine. Write for our 1905 Catalog.

BRADY CEMENT STONE MACHINE CO., Ltd.,

410 N. Jackson Street,

JACKSON, MICH.

The "BLAKE" Rock and Ore CRUSHER

For Crushing all Kinds of Rock.

MANUFACTURED BY

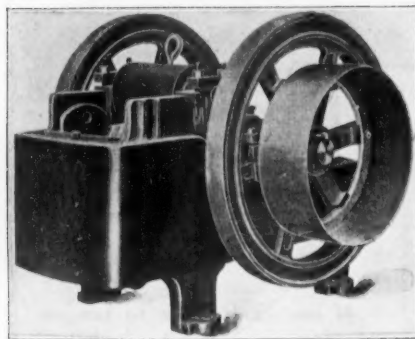
**YAGLE FOUNDRY
AND
MACHINE CO.,**

(Limited.)

32d St. and A. V. Ry.,

PITTSBURG, - - PA.

Repair Parts Furnished.
Write for Pamphlet

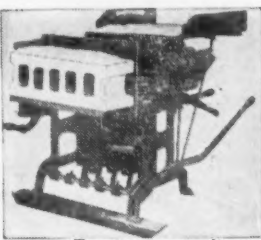


The Simplicity Building Block Machine

For the manufacturer of hollow or solid concrete building blocks. Adjustable for all sizes and shapes. Delivers the block on its side, a saving of labor. Wood pellets are used, other machines use iron pellets, a full set of which cost as much or more than price asked for our complete machine. CONSIDER WELL BEFORE PURCHASING. Agents wanted in every State.

THE STANDARD SAND & MACHINE COMPANY
CLEVELAND, OHIO.

Manufacturers of Mixers, Screens, Dryers, Conveyors, Etc., for equipping Building Block and Wall Plaster Plants. Ask for catalogue and prices.



"THE SIMPLICITY."

ROCK PRODUCTS

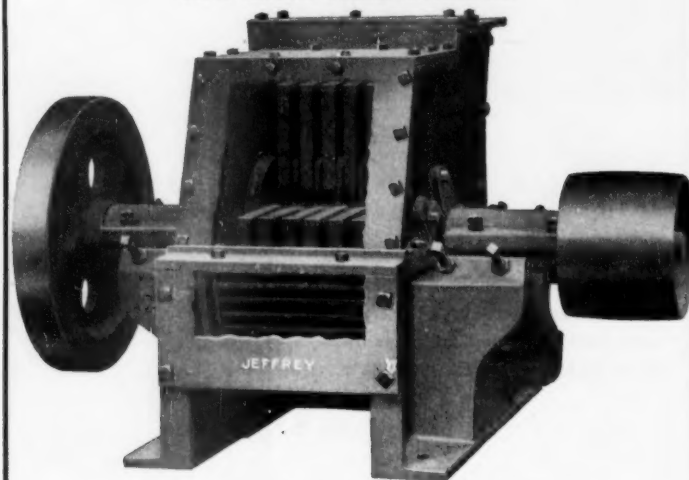
ONE YEAR

ONE DOLLAR

JEFFREY PULVERIZERS

CRUSH

LIME STONE AND SAND ROCK, QUARTZ ORE AND FURNACE
SLAG AMONG OTHER MATERIALS.



SHOWING OUTER AND INNER WORKING PARTS.

SUPERIOR FEATURES.

Accessibility of working parts. Simplicity in changes of parts.
Substantial Pillow Blocks. Material partly crushed in suspension.

SEND FOR CATALOGUE 30 FOR DETAILS.

THE JEFFREY MFG. CO., Columbus, Ohio, U. S. A.

Elevating-Conveying-Power Transmitting Machinery.

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Sand Lime Brick Hardening Cylinder

AS FURNISHED BY

SCHWARZ SYSTEM BRICK CO., 8-10 Bridge St., N. Y. City.



**The Best Brick Produced at the Least Cost,
Leaving the Largest Margin of Profit.**

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Lycoming Calcining Co.

Miners of GYPSUM and
Manufacturers of CALCINED PLASTER.

Gives the very best results in manufacturing
WALL PLASTER and WOOD PULP PLASTER.

MILLS AND MINES:

GARBUTT, Monroe County, NEW YORK.

ADDRESS ALL COMMUNICATIONS TO

Main Office, WILLIAMSPORT, PA.

B. S. NEWTON, President.
1829.

GEO. E. NEWTON, Treasurer.
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Seventy-five years of successful business is our proud record.

WE ARE PRODUCING THE HIGHEST GRADE OF
**Nova Scotia Land and Pure White
Windsor Calcined Plaster.**

Our extensive plant is complete in every department.

The latest mechanical improvements.

Unsurpassed facilities for filling large orders promptly.

Abundant resources.

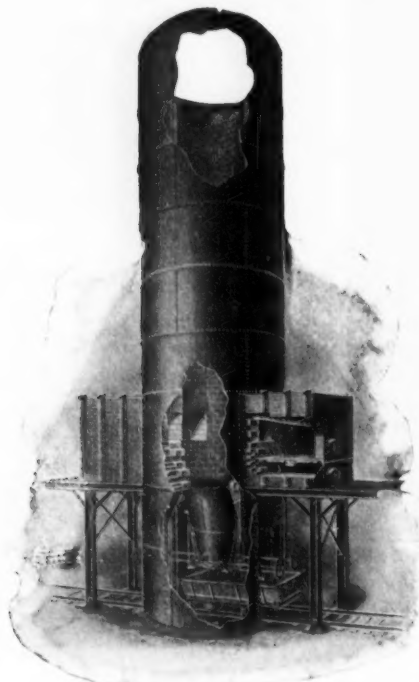
Send us your orders and let us figure for you.

We can give you absolute guarantee of reliable goods.

Our long experience is at your service.

RED BEACH PLASTER CO.
RED BEACH, ME.

Keystone Continuous Burning Lime Kiln



Single kiln as it appears when erected ready for charging platform and building. This cut shows the interior of the kiln. Note the steel deflection plates at the top to protect the brick wall. Note the handy position of car to receive the lime.

BROOMELLS' PATENT.

Built in the most substantial manner from heavy steel plates can be set singly or in a battery; easily set up by unskilled labor; no foundations required above the ground level, large storing space for rock at the top.

Either wood, bituminous coal, producer gas or natural gas can be used as fuel.

Manufactured by

Broomell, Schmidt & Steacy Co.

YORK, PENNSYLVANIA.

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MANUFACTURERS OF AND WHOLESALE DEALERS IN

WORKS AT

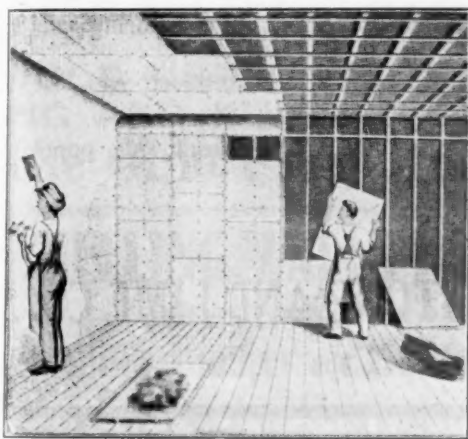
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**Ohio White Finishing Lime,
Ground Lime, Lump Lime,
Fertilizer, Hydrate Lime,
Cement, Plaster,
Hair, &c.**

Capacity
3500 Barrels
Per Day.

OFFICE:

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Sackett Plaster Board

A material used in the construction of Walls and Ceilings in place of wood and metal lath. Made in Sheets 32" x 36", $\frac{1}{4}$ " thick. Nailed directly to studding and finished with hard plaster.

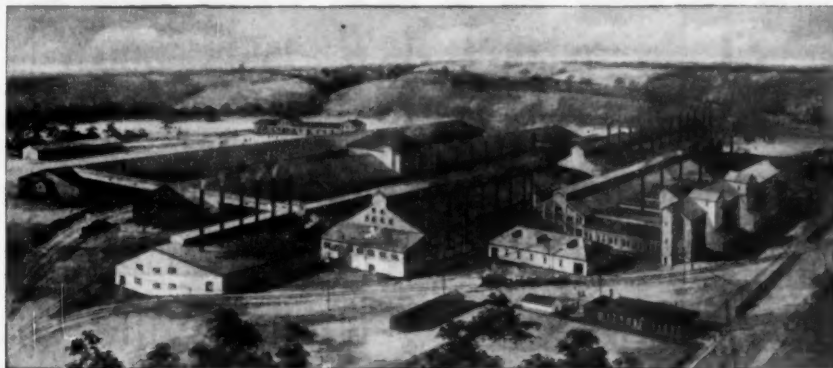
Sackett Plaster Board is light, economical and durable. Will not warp, buckle or shrink. Is warmer than lath, consequently saves fuel. Is a fire retardent recognized by fire underwriters.

Walls and Ceilings constructed with these boards cannot fall.

GRAND RAPIDS PLASTER CO.

Manufacturers of Wall Plasters,
Calcined Plasters and other Gypsum Products.

WESTERN SALES AGENT.

GRAND RAPIDS, MICH.

Our Works

Located at Cementon, Lehigh County, Pa., in the center of the greatest cement producing district in the country. We manufacture yearly about 1,250,000 barrels of Portland Cement by the rotary

kiln process with the most modern machinery that the market affords. This, together with the fact that we employ careful and skilled workmen only, permits us to assume full responsibility for our statement that we manufacture a product equal in point of quality to any other on the market.

THE WHITEHALL PORTLAND CEMENT CO.

1719-1725 LAND TITLE BUILDING.

PHILADELPHIA, PA.

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Tell 'em you saw it in ROCK PRODUCTS.



**Big
B**



Lime.



BIG B LIME

We take this opportunity to thank our trade for their generous patronage during the past year and to wish the readers of "Rock Products" a prosperous New Year.

Our lime sales for 1904 bear witness to the popularity of "Big B."

The quality of the lime, our capacity and railroad facilities insuring the prompt filling of orders, and our methods of doing business will interest you.

If you are not already handling this lime write us early, secure this popular material and see your business grow.

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MARION, OHIO.

STUCCO RETARDER.

We are the largest manufacturers of Retarder in the world.

We guarantee our goods to be equal, if not superior, to any on the market.

We will prepay freight on samples for tests, to any part of the United States or Canada. Information regarding the manufacture of Wall Plaster, cheerfully given.

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MASONS' SUPPLY DEPOT.

Manufacturers of, and Wholesale Dealers in

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WESTERN LIME & CEMENT CO., MILWAUKEE, WIS.

Largest Manufacturers of Magnesian White Lime in the United States.
Daily capacity, 10,000 Bbls.

Exclusive Northwestern Distributing Agents.

For all the best Lehigh Valley, Pennsylvania, Brands of Portland Cements

Direct Importers of German Portlands.

Leading Shippers Throughout the Northwest, of Mason's Building Materials in General.

HIGH GRADE

FIRE BRICK

For Cement Works, Lime Kilns, Cupolas, Steel and Iron Works of every description :: :: ::

Louisville Fire Brick Works, K. B. GRAHN, Prop.,
Highland Park, Ky. P.O.

STONE PRESERVATIVE

A Colorless Liquid Applied Cold with a Brush to the Surface of

CEMENT, STONE, BRICK, CONCRETE, ETC.

Completely prevents the penetration of air and dampness. For full particulars on the above, also on materials for preventing penetration of dampness in basements, efflorescence on walls, etc., address

HUNKINS-WILLIS LIME AND CEMENT CO.
Specialty Department ST. LOUIS, MO.

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PATENT SOAPSTONE FINISH

PLAIN AND IN COLORS FOR WALLS AND CEILINGS.

Patent Soapstone Mortar.

Prepared in any Color for Laying Pressed and Enamelled Brick, Stone Fronts, Terra Cotta, Chimneys, Fire Places, Etc.

The Dodge Blackboard Material or Artificial Slate.

The Potter Blackboard Material.

SOAPSTONE MICA. CONCRETE DRESSING.
CRUSHED, GROUND AND BOLTED SOAPSTONE.

AMERICAN SOAPSTONE FINISH CO.
C. P. DODGE, Proprietor. CHESTER DEPOT, VT.

Stucco Retarder.

Our Stucco Retarder is the Oldest, Strongest, and most Uniform Retarder on the market to-day. A trial order will convince you.

PREPAID SAMPLE SENT UPON REQUEST.

CHEMICAL STUCCO RETARDER CO.,
Incorporated 1895. WEBSTER CITY, IOWA.

SPECIAL MACHINERY AND FORMULAS

FOR THE MANUFACTURE OF

WOOD FIBER PLASTER, FIRE PROOF-
ING AND KINDRED PRODUCTS.

The Ohio Fiber Machinery Co.

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GENERAL MANAGER.

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We furnish the latest improved FIBER MACHINE, (fully patented), also FORMULAS, on a reasonable proposition. The strongest companies and oldest manufacturers are operating under my contracts.

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WHEELING WALL PLASTER CO.,

MANUFACTURERS AND JOBBERS

Wheeling Plaster and Builders Supplies.

WHEELING, - - WEST VIRGINIA.

Improved Automatic DRIERS

Specially Adapted to Sand, Lime, Stone, Clay, Etc.
CAPACITY AND ECONOMY. NO WEAR AND TEAR.

American Process Company
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MASTIC

THE NEW PROCESS Wood Fiber Wall Plaster.

A Winner from the beginning. Architects and Artisans unite in its praise. The demand for this famous brand of wall plaster fast becoming universal. Formulas and machinery protected by U. S. letters patent. Territory rights to manufacture for sale on reasonable terms. Plans and specifications for new mills furnished. Machinery supplied and located at minimum cost. Trade supplied with MASTIC from our mills. If this looks good to you write

The Ohio Wood Fiber Plaster Co.
COLUMBUS, OHIO.

United States Gypsum Co.

General Offices, 184 LaSalle Street, CHICAGO, ILL.

Manufacturers of WALL PLASTERS

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Alabaster Cement Plaster.
Big 4 Cement Plaster.
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Duncombe's Cement Plaster.
Flint Cement Plaster.
Granite Cement Plaster.
Ivory Cement Plaster.
Imperial Cement Plaster.
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O. K. Cement Plaster.
Rock Cement Plaster.
Roman Cement Plaster.
Red, White and Blue Cement Plaster.
Waterloo Cement Plaster.
Zenith Cement Plaster.
Baker Cement Plaster.

Prepared WALL PLASTERS Sanded.

Adamant Wall Plaster.
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Diamond Wall Plaster.
Granite Wall Plaster.
Ivory Wall Plaster.

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Zenith Wall Plaster.
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BRANCH OFFICES: Ft. Dodge, Iowa; New York Life Bldg., Omaha, Neb.; 480 Virginia St., Milwaukee, Wis.; Lumber Exchange, Minneapolis, Minn.; Foot of Tower Ave., West Superior, Wis.; Hammond Bldg., Detroit, Mich.; Indianapolis, Indiana; Sandusky, Ohio.

Swindell Patent Lime Burner

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The only successful method of Burning Lime
with Producer Gas.

40 per cent. increase in output of Kilns.
30 per cent. Saving in Fuel.

Eight Kilns in successful operation for past seven months at Toledo
White Lime Co.'s plant, Martin, Ohio.

WM. SWINDELL & BROS.

German National Bank Building,

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Tell 'em you saw it in ROCK PRODUCTS.



Red, Brown,
Buff and Black
**MORTAR
COLORS**



The Strongest and Most Economical in the Market.

Our Metallic Paints and Mortar Colors are unsurpassed in strength, fineness, and body, durability, covering power and permanency of color. Write for samples and quotations.

CHATTANOOGA PAINT CO., CHATTANOOGA, TENNESSEE.



**ASH GROVE
WHITE LIME ASSOCIATION**
MANUFACTURERS OF
**High Grade
White Lime.**
KANSAS CITY, MISSOURI.

OZARK COOPERAGE CO.

MANUFACTURERS OF

Lime, Cement and Salt Cooperage Stock.

We are specialists and can supply your wants promptly.

Frisco Building,

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The
Central Ohio Lime and Stone Co.
of Marion, Ohio.

CAPITAL \$150,000.00.

We own One Hundred and Seventy Acres of the best and choicest lime and stone land in Central Ohio. The plant is located north of the city on the Pennsylvania R. R. We are now operating our plant with a large force of the most experienced men that can be found anywhere.

We produce and have the statements to show that we have the best white lime that is on the market. Our furnace stone is pronounced by experts and consumers to be the best they have ever used.

Our kilns and crusher plant are now in full operation and we solicit your patronage. We guarantee our product to be as good as the best, give us a trial order and be convinced of our statement. All orders placed with us will receive prompt attention.

The Central Ohio Lime and Stone Co.

NEW ERA CEMENT ROOF TILING

The Best Roofing Material in the World. The Most Profitable Enterprise of the Day.

INEXPENSIVE. They cost less than wooden shingles and half the price of slate.
EVERLASTING. The material improves with age and is indestructible, two parts of sharp sand and one part of Portland Cement being used.

HANDSOME. Can be made in all desirable colors which cannot fade and never need painting.

FIRE, DUST AND WATERPROOF. Fire has no effect on them; dust, rain or soot cannot find their way through this roof, as the tiles are double interlocking and form an impenetrable sheet of cement.

STORMPROOF. Fastened by wire clasps from the inside, no storm can raise them.
NO SKILLED LABOR required to lay this roof, no nails or tools used. Common sense and common hands the only requirement.

NO ROOF BOARDS necessary, strips 1x3 inches placed 8 1/4 inches apart do the business.
NO HEAVY ROOF CONSTRUCTION needed, as they weigh 150 lbs. less per square than slate.

OUR PATENTS cover the United States and Canada. We will dispose of them for any State, County or City. We manufacture our own machines and guarantee them.

SECURE YOUR TERRITORY IN TIME.

For further information write to

FURMAN CONSTRUCTION CO.

613-619 FORT ST. WEST,

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Tell 'em you saw it in ROCK PRODUCTS.

Louisville Hydraulic Cement.

Thirty million barrels used in important construction west of the Alleghenies.

Thorough reliability demonstrated by over seventy years' continuous use, most of the bridges, sewers and public works having been built with Louisville Cement.

Louisville
Cement
Cinder
Concrete
Arch



Sixteen feet
Span
Eight inches
Thick at
Crown

Louisville Cement with two parts sand makes mortar as strong, after six months, as mortar made of Portland Cement with four parts sand.

The best work is the kind that accomplishes all the objects sought at least expense.

Illustrated Pamphlets Mailed on Application.

Western Cement Co.

281 W. Main St.

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Garry's Genuine Charcoal Iron Roofing WILL NOT RUST

If properly cared for. Roofs put on forty and fifty years ago are now good.

Manufactured Exclusively by
THE GARRY IRON AND STEEL CO.
CLEVELAND, OHIO.

WOOD PLASTER

The Coming Wall Covering

WE ARE THE ORIGINATORS.

After several years of experimental work we have reached **SUCCESS** and our goods are recognized as of the highest quality.

We wish to establish our trade in every important market, and will give local capital and local talent an opportunity to go in with us in the erection and operation of

MIXING PLANTS

Using our **IMPROVED MACHINERY and FORMULAS.**
The management of the local plant to remain with **LOCAL INTERESTS.**

Write us for full information.

The **ELYRIA WOOD PLASTER CO.,** Elyria, Ohio.

Buckeye Portland Cement Co.

ESTABLISHED 1888.
Manufacturers of the celebrated
"Buckeye" brand of

Portland Cement

"Buckeye" has stood the wear and tear in many important places for the past fifteen years and under the new process of manufacture is now better than ever :: ::

WE INVITE YOUR
CORRESPONDENCE.

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THE OMEGA PORTLAND CEMENT CO.

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JONESVILLE, MICHIGAN.

The Best Portland Cement Is

"LEHIGH"

MANUFACTURED BY

Lehigh Portland
Cement Co.

ALLENTOWN, PA.

Write for Catalogue.

Capacity, 4,000,000 Yearly.

Chicago Portland Cement Co.



MANUFACTURER OF...

"CHICAGO AA"
PORTLAND CEMENT.

We make one brand only.

The best that can be made.

SEWER PIPE
FIRE BRICK
PLASTER, ETC.

"LIMOID"

SEWER PIPE
FIRE BRICK
PLASTER, ETC.

Charles Warner Company.

LAND TITLE BUILDING,
PHILADELPHIA.

WILMINGTON,
DELAWARE.

A
STANDARD
PORTLAND

FOR
UNIVERSAL
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CEMENT DEPARTMENT.
ILLINOIS STEEL COMPANY,
The Rookery, CHICAGO, ILL.

BANNER CEMENT CO., LOUISVILLE CEMENT.

MAKERS OF THE FAMOUS BANNER BRAND OF

Guaranteed that 90 per cent. will pass a
ten thousand Mesh Sieve.

WE SELL TO DEALERS ONLY.

GENERAL OFFICE: MASONIC TEMPLE,

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PENINSULAR PORTLAND CEMENT CO.
MANUFACTURERS OF
High Grade Portland Cement

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Glenwood Lime, Banner
Brand Louisville Cement,
Portland Cements and
Building Materials.

St. Louis, Mo.

Tell 'em you saw it in ROCK PRODUCTS.

Newaygo Portland Cement Co.

Sales Office: Michigan Trust Building,
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Write us for prices.

Send us your orders.

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The American Sandstone Brick Machinery Co.

.....MANUFACTURERS OF.....

The Komnick System Sandstone Brick Machinery.

Over 70 plants running in Europe and 15 plants running in the United States, others being installed in both countries.



Every part made in our own works and thoroughly tested before leaving our hands.

Factory and Office:

SAGINAW W. S., MICH.

Fisher's Hydraulic Stone System,

W. H. FISHER, Patentee.

Architects recommend it. People are delighted with it.

A Sure Money Maker.

We have solved the building material question. Every block a perfect one, because the tamping is done by hydraulic pressure and automatic hydraulic kneading, which drives out all of the air and closes all of the voids. The machine is entirely automatic and the process such that the necessary chemical reaction is not hindered. All shapes and designs, veneer blocks for frame structures, angular blocks for hollow walls. Walls built from our block are absolutely sanitary. We make thousands in a day, large profits are beyond question. Our product is in constant demand. This is the only system which at once removes the brick from the iron or wooden mold, thus giving the hardening process the greatest possible freedom. A plant can be seen in full operation at Memphis, Tenn., where the Memphis Hydraulic Stone Co. have one of the finest up-to-date plants in the country.

**ALL MACHINERY GUARANTEED
FOR ONE YEAR.**

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The P. B. Miles Mfg. Co.

Manufacturers of the Miles Cement Block Machines.

Simplicity, Durability, Rapidity are our strong features. All blocks are made face down, which insures a rich face for the block. Write us to day for literature.



THE P. B. MILES MANUFACTURING CO.

Offices, 23 Dwight Building.

JACKSON, MICHIGAN.



FORWARD, MARCH!

Onward and forward is the progress of the PETTYJOHN HOLLOW BLOCK MACHINE!

WHY? Because everybody knows that concrete should not be disturbed after it is moulded or while it is setting, but this is the only machine with which it is possible. BLOCKS cost 6 cents to make; sell for 18 cents. One man can make 200 blocks per day. Machine and complete outfit cost \$125.00. Figure the profits. Fully Guaranteed. Sent on Trial.

Write for Catalog.

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Tell 'em you saw it in ROCK PRODUCTS.

Sand-Lime Brick



AMERICAN SYSTEM

Sand Lime brick plants are now in operation all over the country, but the most successful are those operating under our American System.

No chance for failure by our methods, as we install the plants complete, start and operate same under guarantee until 100,000 brick are made.

No Royalties, no secret process, and no Chemicals; our plants are automatic and continuous in operation.

Guarantees absolute, and all money refunded in case of failure.

New Illustrated Catalogue just out. Sent free on application.

AMERICAN SAND-LIME BRICK CO.

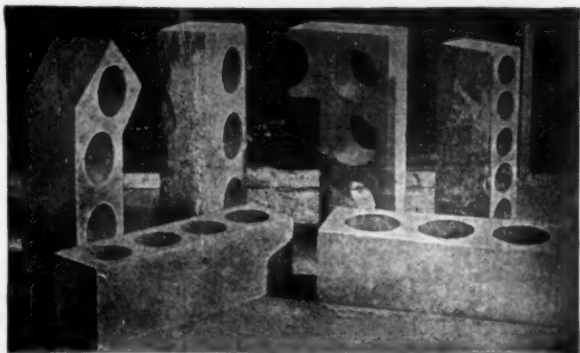
GREAT NORTHERN BUILDING, CHICAGO, ILL.

NEW YORK OFFICE; 39 Cortlandt St. SOUTHERN OFFICE; City Bank and Trust Co. Bldg., Mobile, Ala.; SAN FRANCISCO OFFICE; 501 Rialto Bldg.

STONE CHEAPER THAN BRICK.

Made under the new method without tamping or pressure on our machine which costs but

\$50.00



We Make Seven Stones

in one operation 2 ft. 6 in. x 9 in. x 10 in. No experiment; our work can be seen in thousands of buildings. Send for detailed information.

STEVENS CAST STONE CO.,

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SAND-CEMENT BRICK

are Revolutionizing the Brick Industry.

We erect and fully equip plants with all the necessary machinery to successfully manufacture Sand-Cement Brick. Our Factories are uniformly successful and are not experiments. We are owners of the Maurer Pressed Brick Machinery and Process for curing Sand-Cement Brick and Blocks. Get the best machinery and you will save money—We have it. Send for Free Booklet.

The National Sand-Cement Brick Co.

119 North Seventh Street.
Rooms 54 and 55 DeMeul Building.

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Hollow Concrete Walls and Partitions Two-Piece System

Would You Like to Learn

All about the two-piece wall containing the header bond, made of True Concrete, stronger in a 1 to 10 mixture than hand-tamped damp sand and cement is in a 1 to 3 mixture. Every block made under heavy pressure, in steel molds, in one set of which all the different widths of wall from 2½ inches to 17 inches can be made by simply changing the adjustment, making a wall 50 per cent. hollow, containing an air chamber both in the horizontal and perpendicular, through which moisture, heat and cold can not penetrate—a block easily handled by one man—to which any facing desired ¼ inch thick is applied before the block is pressed. One thousand square feet of wall per ten-hour day made, cured, and cared for with nine men—three times the daily product possible under any other system.

All this, and more, is fully described and illustrated in our prospectus. Free for the asking.

THE AMERICAN HYDRAULIC STONE CO., Century Bldg., Denver, Col.

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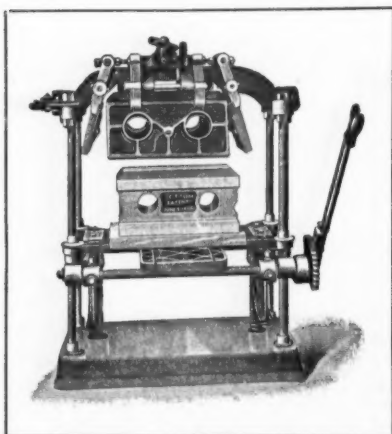
Our Machines are Simple, Complete, Inexpensive, Reliable. Either Hollow or Solid Concrete Blocks

One Machine in a Section Means Many More Soon.

HERE IS A RECORD HARD TO BEAT—Out of 2,300 blocks in one run only ten were broken or imperfect. No dough-faced blocks produced, but a sharp rock face, rivaling granite or limestone for sharpness. We court comparison of our rock-faced block with anything in the United States. Price within the reach of all.

You can build your own house with our Machines and save money, even if you throw the molds away afterwards. Write For Particulars.

MICHIGAN CEMENT BLOCK MACHINERY COMPANY, UNION CITY, MICHIGAN.



The Cottom Artificial Stone Blocks made on the

"Cottom Machine"

Are Superior to All Others.

They are laid in the wall by pouring semi-liquid cement into and between them, the process being covered by patent, making A PERFECT WALL. For information address, :: :: ::

The Cottom Artificial Stone and Mfg. Co.

46 Callahan Bank Building, DAYTON, OHIO.

Harmon S. Palmer Hollow Concrete Building Block Company,

originators of the industry by producing SCIENTIFIC and GEOMETRICAL MACHINES and a practical SYSTEM which turned failure into success. All other machines of any value whatever are simply PALMER machines and PALMER'S patents, and all make PALMER'S blocks without the proper combinations.

Get the ORIGINAL UP-TO-DATE, the PERFECT and most PRACTICAL. The BEST is the CHEAPEST. No INJUNCTION against our LICENSEES.

We agree to prosecute infringers; are doing so and are securing injunctions. We make STANDARD, COMBINATION and AUTOMATIC machines. Notice how others copy our Registered Trade Mark.

THE HARMON S. PALMER BUILDING BLOCK CO., Washington, D. C.



No tamping—making more than a block a minute with ease.

The Fastest Machine

ON THE MARKET

Making Concrete Building Blocks.

The Product the Best Speed Saves Money

Evenly distributed pressure of five tons. Wedge shaped, curved or radial block, all shapes made with equal facility—any facing. Water-tanks. Culverts. Arches.

The Link-Hark Mfg. Co.

203-204-205 Livingston Bldg.,

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Tell 'em you saw it in ROCK PRODUCTS.

Small Capital, Big Profits, With the

Hercules Cement Stone Machine

Makes all Kinds of
Hollow Cement
Building Blocks.

2 Inches to 5 Feet
Long.

Simplest, Fastest,
Easiest to Work.



Tamp On The Face
of the Mould.

Only way to get
perfect blocks.

Face 2 to 1 Back 5 to 1
Saves cost, gives water-
proof blocks, any color,
any size, shape or design
Makes SILLS, WATER
TABLE, COPING, in fact
any kind of a stone.

Hercules produces more blocks, better blocks and at less cost than any other machine, thus putting you in position to defy competition. Cement Stone is displacing other building materials. Be the first in your locality to start a plant. Write today for our catalog.

Century Cement Machine Co. 181 Main Street W.
Rochester, N. Y.

Here is what you have been looking for!

Cement or Lime Brick Machine

Makes 10 perfect brick per minute with two unskilled workmen.

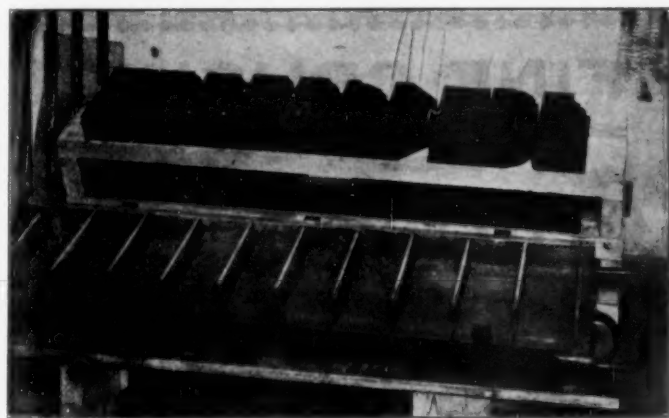
Be your own brickmaker.

Can be changed from plain to ornamental brick or vice versa with no loss of time or extra expense.

E. W. SEAMANS,

97 Ottawa Street,

GRAND RAPIDS, MICH.



Companies Organized and SYSTEMS INSTALLED with the most modern EQUIPMENT.

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Comprising the entire line of COMPOSITION MATERIALS.

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Concrete Engineering Experts, Inspectors and Directors of Operations Furnished.

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Rough, Cut and Sawed Sand Stone.
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Crushed Sand Stone for Concrete.

Sand, 98 per cent. Silica, suitable for core work, Iron and Steel work, Cement Block and Mortar. Also Fire Sand.

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For all purposes.

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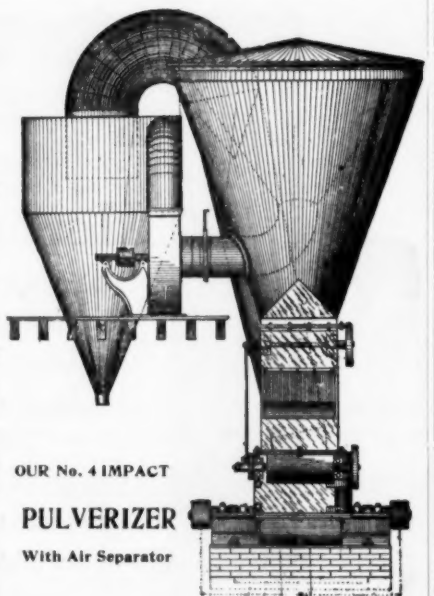
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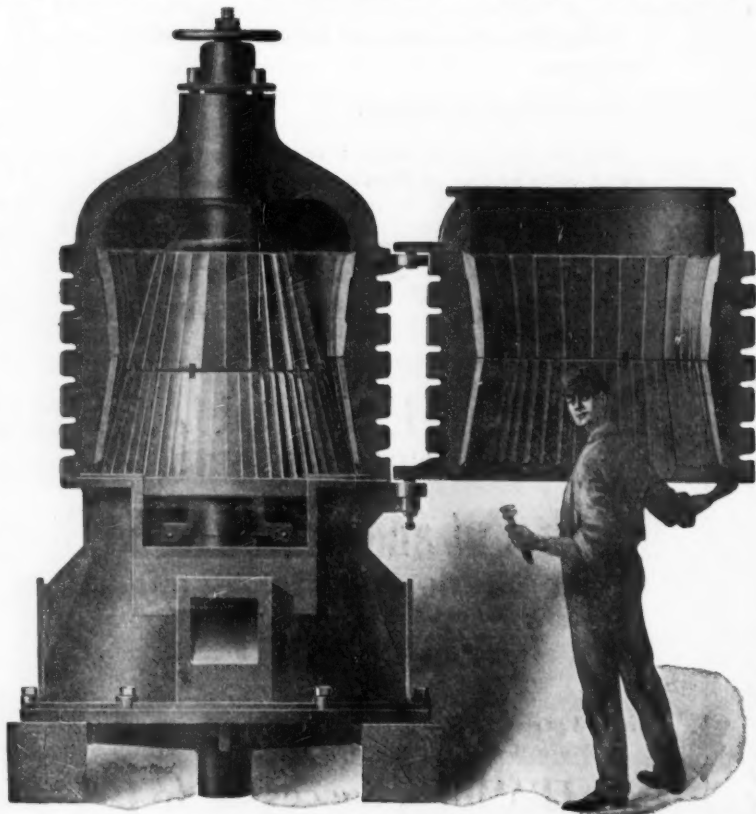
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Soft and Moderately hard rocks
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Capacity, 15 to 20 tons per hour.

We also build Small Rotary Crushers.

ADJUSTABLE TO COARSE OR FINE WORK.

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For Heavy Service and rough usage.

Designed and constructed to meet the requirements of heavy machinery—Stone and Cement Mills, Rock Crushers, etc.—and for handling rough materials of all kinds, wet or dry.

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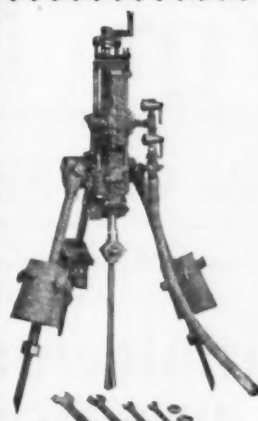
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The Homestake Mining Co.,

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Ingersoll-Sergeant

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Power is supplied by 7 INGERSOLL-SERGEANT

Air Compressors including the

LARGEST CORLISS COMPRESSOR IN THE WORLD

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Mica Schist or Fire Stone Linings

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Used in place of Fire Brick. It costs less and lasts longer. Any mason or person that can build a stone wall can lay it. It comes out of the ground in irregular shapes and sizes. It looks like building stone. It is easily broken by a hammer. The small pieces and crumbs can be mashed up and mixed with a little clay and water, which makes a Fire Mortar to lay the wall; therefore no loss—under strong heat it freezes into a solid wall.

We also grind this Mica Schist Rock, for making Fire Brick, Fire Sand, Furnace Bottom Sand, &c.

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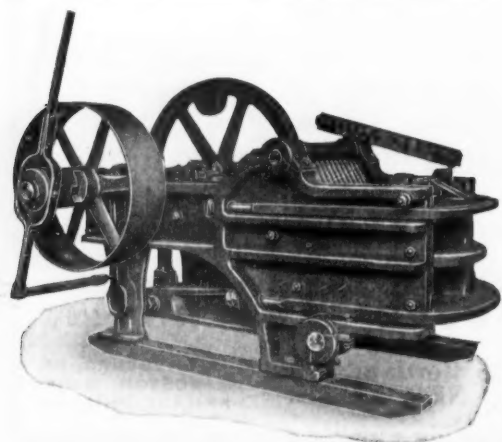
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We are now building the new Plymouth Mill at Fort Dodge, Iowa, the finest mill in the United States.

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CRUSHERS

for soft and medium
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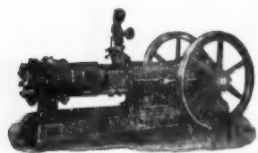
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ARE IDEAL FOR QUARRY WORK.

Self-Oiling Dust Proof
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Grinding SIXTY MILLION Bbls. of Cement Annually.

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We manufacture machines to reduce any
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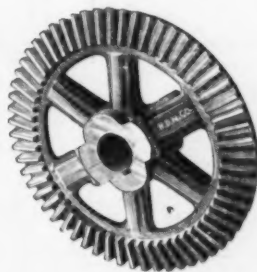
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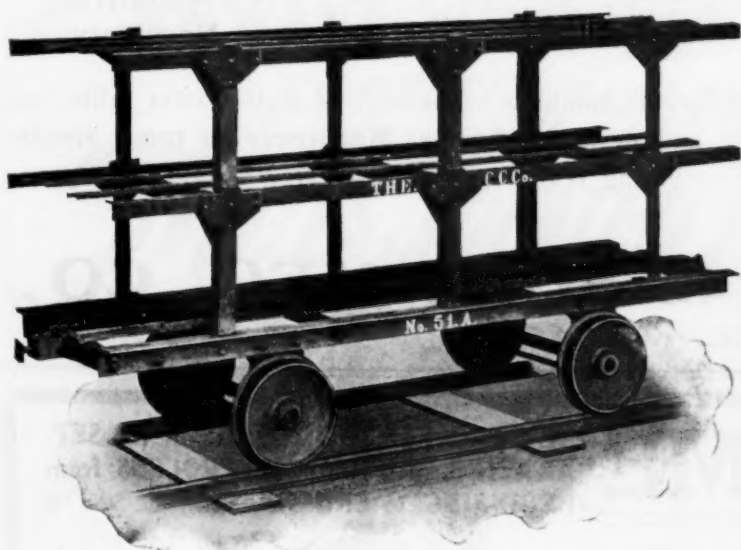
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can be operated now satisfactorily with Nuttall Cut or Planed gears as has long since been demonstrated by the many Cement and Brick manufacturers who have standardized on our gears.

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Of all descriptions for Quarries, Mines, Cement Plants, Brick Yards, Contractors use, and general purposes. Special Cars of all kinds designed and built to order.



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TRIPLE DECK CAR. (Patented.)

For Concrete Building Block, Artificial Stone, Cast Stone, Etc.

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MANUFACTURERS AND BUILDERS OF

Steel Cars and Industrial Railway Equipment. Turntables, Switches, Crossings, Portable Track, Etc.

COMPLETE ESTIMATES FURNISHED.

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Jackson Hand Power Rock Drill



One man with this drill will do the work of three men drilling with hammers and bits. Its records in granite are wonderful. Guaranteed against breakage for two years. Easy to handle or set up. 1000 IN USE.

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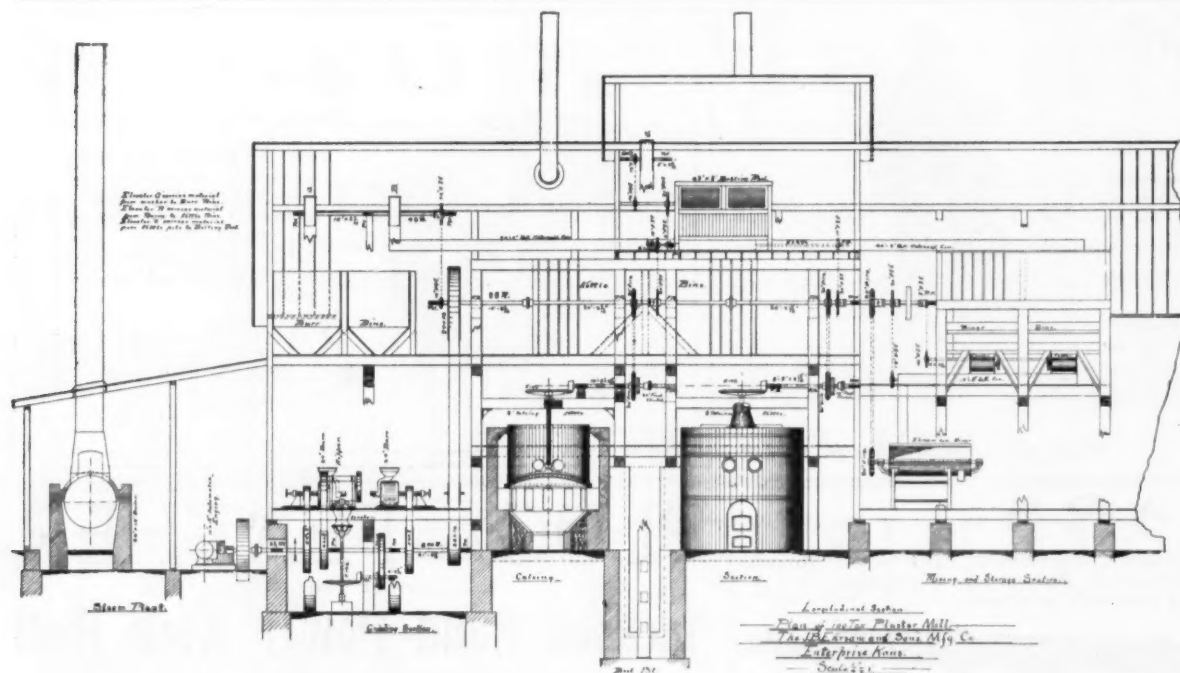
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DRYERS
OF EVERY TYPE
CONSTRUCTED FOR ALL PURPOSES.
BEFORE PLACING YOUR ORDER CONSULT
UNITED STATES DRYING ENGINEERING CO.
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Calcining Kettles
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We are prepared to submit plans and estimates for the complete equipment of wall plaster mills, and furnish all machinery required of our own manufacture and design. **Special Machinery to meet special requirements.** Twenty years experience in building and equipping Wall Plaster Mills. New Catalogue in press. Write for a copy. Address

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HYDRATED LIME

NEW PROCESS, NO GRINDING, NO SEP-
ARATING, AUTOMATIC PROCESS from
BEGINNING to END. ♡ ♡ ♡ ♡ ♡

NO HANDLING of MATERIAL after it is FED to MACHINE.

LUMP LIME as it comes from the KILNS, CONVERTED DIRECTLY into the POWDERED HYDRATE.

THE AIR being excluded during the process, the product contains NO AIR-SLAKED LIME.

ALL PARTICLES of STONE or FOREIGN MATTER are AUTOMATICALLY REJECTED, instead of being GROUND with the PRODUCT as is usually done.

THE HYDRATE is ready for IMMEDIATE USE or SHIPMENT within a FEW MINUTES after the QUICK LIME enters the HYDRATOR. NO SEASONING in BINS necessary.

THE conversion being PURELY CHEMICAL, the PRODUCT is FINER and SMOOTHER, than when reduced by MECHANICAL MEANS and contains NO UNHYDRATED PARTICLES.

THE HYDRATOR ABSOLUTELY TAKES CARE of itself, whether fed to the LIMIT of its capacity, or at IRREGULAR INTERVALS.

THE ONLY REQUISITE being the WEIGHING of the LIME, preferably by the wheelbarrow-load, so that a fixed quantity is fed the HYDRATOR each time.

There is practically NO WASTE except the worthless particles.

The COST of converting the QUICK LIME into HYDRATE is more than off-set by the GAIN in WEIGHT.

ONE to TEN HORSE-POWER will do the work.

CAPACITY from ONE to TEN TONS per HOUR, depending upon SIZE of MACHINE.

THE PROCESS is adapted to ANY LIME.

THE HYDRATOR embodying the PROCESS, will be sold outright—NO ROYALTIES.

YOU are CORDIALLY INVITED to EXAMINE this MACHINE in OPERATION, or if you will send not less than five barrels of your lime to the Company, we will hydrate it for you free of charge and return you samples.

SEND NOW for ILLUSTRATED CATALOGUE giving full particulars.

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SOLE OWNER of U. S. PATENTS for MACHINE and PROCESS, granted October 25, 1904 to James Reaney, Jr., of Baltimore, Md. Copies of Patents may be had upon application.

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WE SELL COOPERAGE

QUALITY HIGH. ATTRACTIVE PRICES

THAT'S THE DOUBLE IMPRESSION
WE AIM TO GIVE OUR CUSTOMERS.

WE WANT YOUR BUSINESS

SHIPMENTS MADE FROM

MILLS LOCATED IN THE

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YOUR NEXT ORDER WITH

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AUSTIN MACHINERY GIVEN HIGHEST AWARDS OVER ALL COMPETITORS

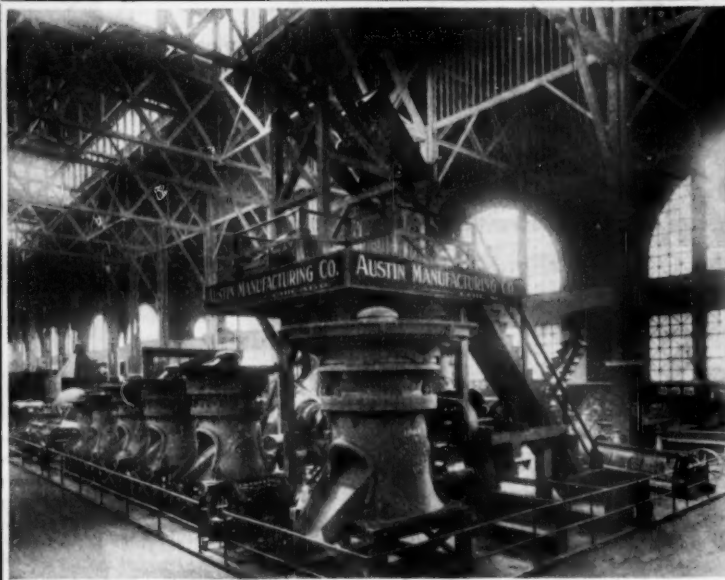
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THREE GOLD MEDALS

AT
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1904

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The AUSTIN GYRATORY CRUSHER EXHIBIT

was the ONLY Gyratory Crusher
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thus officially stamping
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as the
**HIGHEST TYPE OF GYRATORY
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A GRAND PRIZE
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being the
**HIGHEST AWARDS EVER
GIVEN** to one Company for
Machinery of that Nature
in the
HISTORY OF WORLDS FAIRS

PAPER SAGKS



THE MOST CONVENIENT.
SATISFACTORY &
CHEAPEST PACKAGE FOR
CEMENT.
PLASTER.
HYDRATED LIME

WE SHALL BE PLEASED TO SEND
SAMPLES AND QUOTE PRICES.

SAND LIME BRICK

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Lime Hydration

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Finlay Sand Dryer.

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National Brick Machinery Co.

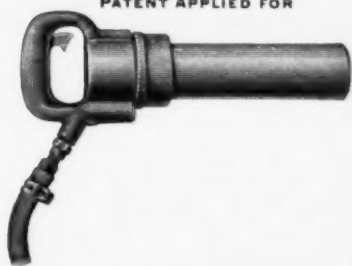
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PATENT APPLIED FOR

The
Little Wonder Air
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Rock Drill



Will drill a perfect round hole by twisting machine back and forth one-fourth turn. Drills from 2 to 12 inches per minute according to hardness of rock. Strikes 2500 blows per minute.

The air passes through the bit and keeps it cool as well as clearing all cuttings from hole being drilled.

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COMPLETE PNEUMATIC PLANTS.

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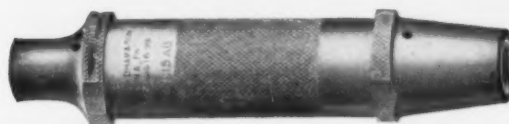
Simplicity Durability Economy Low Cost

TOOLS SENT ON APPROVAL.
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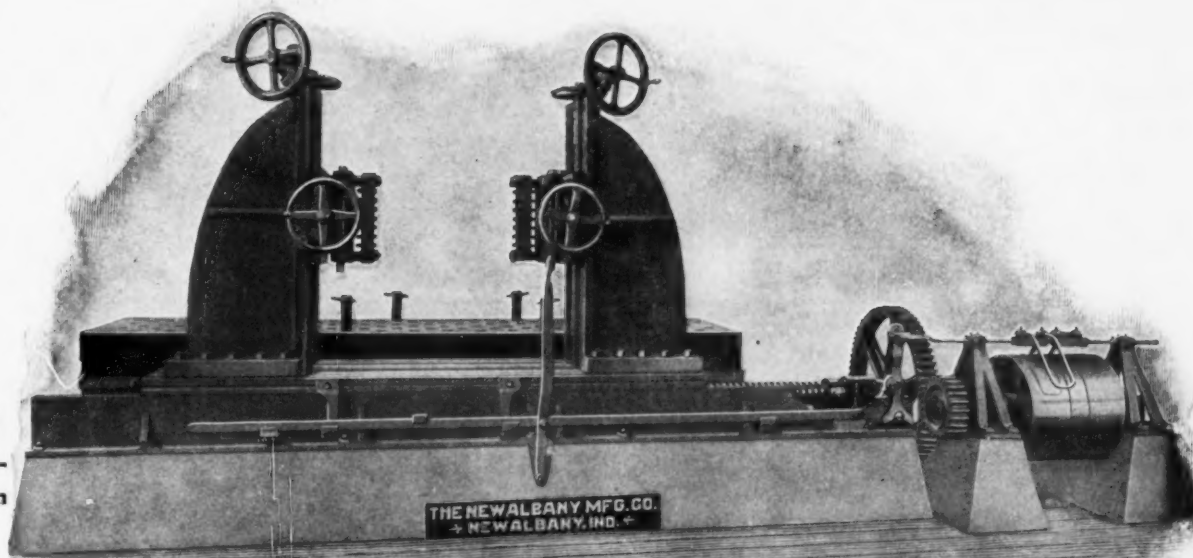
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OUR SPECIALTIES

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Mills Erected Complete
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Dumping Buckets, Stone Carriers or Skips, etc.



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Switches, Frogs, Rail, Turn-
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THE STANDARD AMERICAN BRAND.

ALWAYS UNIFORM.

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Output for 1905 over 30,000 barrels daily.

A few of the many buildings and public works where "Atlas" has been used exclusively are as follows:

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Broad-Exchange Bldg., New York, N. Y.
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Manufactured by

The **ATLAS PORTLAND CEMENT CO.**

30 Broad Street,

New York, N. Y.

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AMERICAN SEWER PIPE Co., Pittsburg, Pa.

Sewer Pipe,

Flue Linings,

Wall Coping,

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Fire Brick and Fire Clay.

All Sizes Sewer Pipe, 2 inches to 36 inches Inclusive.

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AND SALE OF ROCK AND CLAY PRODUCTS.

Vol. III.

LOUISVILLE, KY., FEBRUARY, 1905.

No. 11.



CONVENTION RECORD OF ONE MONTH.



PRATT'S IMPROVED ROCK DRILL.

D. W. Pratt

Machinery Company,

No. 614 North Third Street,

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DESCRIPTION OF ROCK DRILL.

THE VALVE, which is the most important part of a rock drill, is of the Corliss or Rotary design and retains a perfectly steam or air-tight seat under all conditions.

Its movement is ABSOLUTELY and PERMANENTLY POSITIVE under any pressure. IT WILL START AUTOMATICALLY AT ANY PART OF THE STROKE. It will run at any speed desired, whether the VERY FASTEST or the VERY SLOWEST without danger of stopping. It will require LESS STEAM or AIR to do a given amount of work than any other drill, the valve being so constructed that the piston is POSITIVELY REVERSED.

It has a variable stroke and can be used at a stroke where others fail; this being one of the essential qualifications of a good drill, especially in starting a hole or working through seams. It strikes a very hard blow and its recovery is instantaneous. It has no peer as a muddier.

Our drills are made of the very best material the market affords, by skilled workmen, and with new and improved machinery, and particular care has been taken to make them the best on the market. All parts are interchangeable.

Complete plants of Machinery for Mines, Quarries and Contractors.

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Patentees and Sole Manufacturers of

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Angular in shape, made from high-grade Crucible Steel. Tough and lasting. Saws, Rubs, Grinds, Polishes Granite, Stone, Marble, Brick, etc. Does it cheaper and faster than any other Abrasive. Write for prices and samples.

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Quarriers and Manufacturers of

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ALL WORK GUARANTEED FIRST-CLASS.

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The Pirie Tool Sharpening Machine

is now on the Market.

Its capacity is 75 men, but it can be profitably used where 50 cutters are employed within a radius of one mile. For full particulars, write or inquire

PIRIE TOOL SHARPENING MACHINE CO.

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